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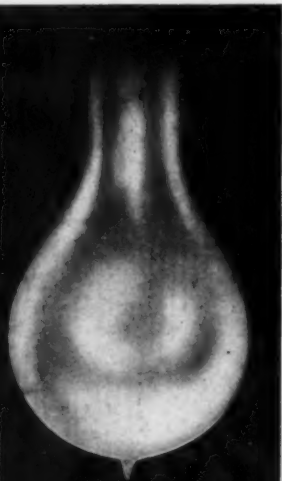
# Railway Age

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SIXTY-NINTH YEAR

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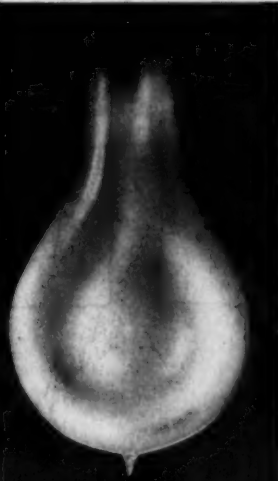
## ILLUMINATION



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Storage Battery



## SERVICE



SAFETY "FF"  
Regulation



SAFETY  
Lighting Fixtures



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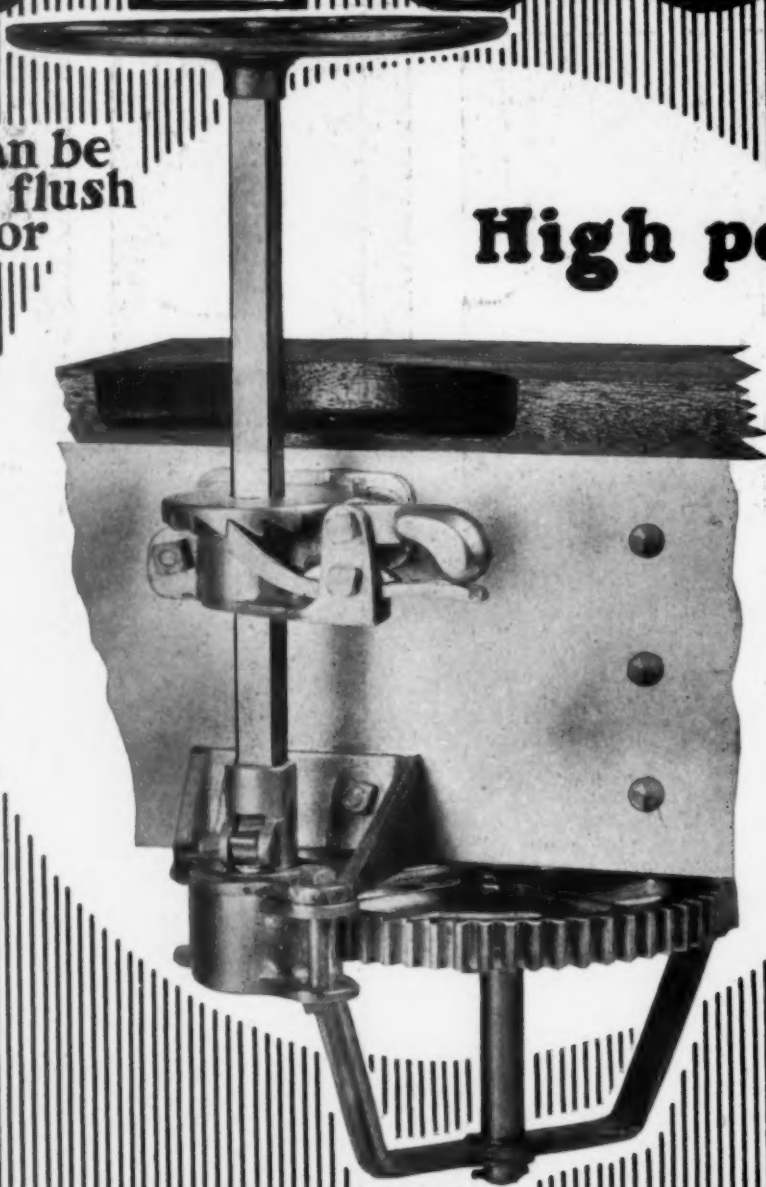
Montreal

# Ureco

Wheel can be  
dropped flush  
with floor

High powered

Drop  
Brake  
Shaft



**Union Railway Equipment Co.**  
**McCormick Building**  
**Chicago**

# EDITORIAL

## Railway Age

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One of the recommendations of the Committee on Construction and Engineering of the National Conference on Street

### Qualifications of Crossing Watchmen

and Highway Safety, appointed by Secretary Hoover, is as follows: "Gate-men and flagmen should be mentally competent and physically able to perform their duties properly." This recommendation, which could without exaggeration have been more strongly worded, should be religiously adhered to. Human life and valuable property are in the care of the watchman. Users of the highways, generally speaking, accept his word for the safety of the crossing without hesitation. The average motorist who approaches a crossing with gates up proceeds on his way with as much assurance as an engineman does when he sees a railroad grade crossing interlocking signal at "clear." There is, however, more reason in the engineman's attitude than in that of the motorist. The towerman cannot display a clear signal for the engineman unless he has displayed a stop signal for transverse traffic. It is, however, perfectly possible for the crossing watchman to fail to lower the gates or to give a stop signal to highway vehicles when a train is dangerously near the crossing. The degree of dependence upon human alertness as far as safety is concerned is, therefore, much greater in the case of the crossing watchman than it is in the case of the interlocking towerman. Until a form of crossing gate is perfected the proper operation of which does not depend so largely on the human factor, the position of crossing watchman will not be one to which the aged and decrepit can safely be assigned.

One of the greatest sources of waste to be found in the operation of the modern steam locomotive is caused by the

### Economy in Locomotive Operation

presence of back-pressure in the cylinders. The problem of reducing back-pressure has been practically solved in power plant operation, but locomotive designers have not been so successful owing to the handicaps of clearance and weight limitations. There have, however, been a number of developments in recent years that suggest the solution of the problem of eliminating back-pressure. One of these is the unaf flow locomotive which was described in the August 23, 1924, issue of the *Railway Age*. In this design the exhaust passages have been utilized to create a partial vacuum in the cylinders without destroying the utility of the steam for the creation of a draft in the stack. There have also been important developments made in the application of steam turbines to locomotives in which back-pressure has been eliminated by the use of condensers. The results of tests of both the unaf flow and turbine locomotives show that the fundamental ideas incorporated in the designs are correct. There is, however, room for further development in the design and construction of both types. Waste has often been defined as ignorance. Unnecessary back-pressure is an absolute loss and the railroads and locomotive builders in this country cannot afford to be satisfied with a casual investigation of these new developments. Here are two proposed methods of eliminating one of the greatest wastes in present day locomotive operation. There may be other

methods; if so, their possibilities should also be given careful consideration. The necessity of securing greater economy in locomotive operation has been confronting the railways for a long time and there is no question but that one of the greatest possible gains will be achieved when back-pressure is eliminated.

Portland cement is furnished by the manufacturer in cloth or paper sacks. The only exception to this rule is the occasional shipment of cement in bulk to

### Why Is Cement Sold

#### By the Barrel?

the user of large quantities. Except for these special cases the sack has been found the most convenient package for the handling of this commodity and the most practical unit for measuring the amount of cement in proportioning concrete mixes. Therefore, to all intents and purposes, the sack is the commercial unit for this material. Yet in spite of this manufacturers and retailers continue to sell cement by the "barrel," a purely fictitious unit equal to the volume or weight of four sacks. Realizing the inconsistency of selling cement by this artificial unit one of the leading manufacturers endeavored to bring about the adoption of the sack as the basis for cement prices and announced on June 1, 1923, that henceforth its quotations would be based on the sack. No other producer followed this lead so that except for the quotations of this one company all prices have continued on the barrel basis and now after a trial of 17 months the manufacturer in question has returned to the old practice, offering in explanation that many of his customers have requested this as they preferred to continue retailing cement by the barrel. This is unfortunate. It is a step away from the current movement for the simplification of commercial practices in this country. Like the cubic yard as the unit of volume for grading or masonry, measured invariably in feet and fractions thereof, the barrel as unit for cement appears to be so well established that it cannot be discarded in spite of the needless complication which its perpetuation imposes.

The Railroad Labor Board's decision last week which increased the wages of enginemen on western railways approximately five per cent and revised a

### The Western Enginemen's Wage Increase

number of the more irksome rules must be regarded as fair and just. It is fortunate that it comes at a time when so much attention is being given to legislation for the elimination of the Labor Board, since the decision is evidence that the board is performing its function of balancing the rights of the three groups it represents—the railways, the employees and the public—in a fair and impartial manner. That the decision was rendered in the face of the fact that no brotherhood representatives have testified in the case may appear unfair on its face. On the contrary, it is the only fair thing that could have been done. If the refusal of a party to a case to testify were able to block a legal decision, our courts would flounder in a muddle of cases that never could be decided. There could be no justice done if such a condition were permitted in the courts. There would be no more justice done if it were



permitted in the adjudication of disputes by the Labor Board. The terms of the decision seem fair, both for the railways and the employees. The wage increase of five per cent is in line with the increase which had been offered and accepted by the enginemen, conductors and trainmen of the eastern lines and the conductors and trainmen of the western lines. The employees could have expected no more. Furthermore, the Conference Committee of Managers of the western railways had tacitly offered an increase of this amount to the enginemen, conditional upon a revision of working rules, so that no complaint against an extreme increase can come from the managements represented by the committee. As for the changes in the working rules, they too were in line with those agreed to by the conductors and trainmen on the western railways. They ease some situations which have been thorns in the sides of the railroads, without imposing burdens on the employees. The changes made outright by the board, those rules turned back for further negotiation and those retained for further consideration should not be challenged by the employees since they are inevitable. The railways themselves will be satisfied since they are, in the main, what they wanted. The decision came at an opportune time, furthermore, since the taking of the strike vote by enginemen on the Southern Pacific had already begun. It should have the effect of forestalling such extreme measures as the brotherhood executives seemed prepared to take to secure acceptance of their demands. Thus the interest of the public is protected.

## A Suggestion from Senator Cummins

SENATOR CUMMINS of Iowa recently has offered a suggestion for the modification of the rate making provisions of the Transportation Act. In doing so he has stated that it is offered as a basis for compromise between the present provisions of the law and certain changes in the law advocated by Senator La Follette.

Nobody can question the ability of Senator Cummins or the sincerity of his desire to help secure the adoption of a policy of regulation which will be fair to both the railways and the public and which will permanently solve the railroad problem. It seems very questionable, however, whether the suggestion he has offered is sound or whether it would be legal or economically practicable to carry it out.

Senator La Follette has contended that railway valuation should be based solely on "prudent investment," and has advocated the passage of a law for that purpose. Senator Cummins believes that to carry out Senator La Follette's scheme is impracticable because the factors that must be considered in making a valuation raise a judicial question which must be settled by the courts and not by Congress. He says, however, he is inclined to favor the La Follette idea that the railroads should be allowed to earn only the actual interest costs on that part of their capitalization which is represented by indebtedness, and that a "fair return" should be allowed only on the remainder of the valuation in excess of the funded indebtedness.

His suggestion really contemplates that the interest on borrowed money shall be treated as part of the cost of operation and given the same recognition as operating expenses, and that the "fair return" allowed on the equity in the valuation represented by the stock should probably be somewhere between  $5\frac{1}{2}$  and 7 per cent.

It seems highly improbable that legislation of the kind indicated by Senator Cummins would be any more constitutional than legislation intended to make "prudent investment" or any other single factor the sole measure of valua-

tion. The Supreme Court, as far as we know, has never held that the way in which a railroad or public utility has been financed is a factor which may be given any consideration, much less paramount consideration, in determining the amount of return that it may earn. What the courts always have held is that a railroad or public utility is entitled to earn a fair return upon the fair value of its entire property. This means that part of the property covered by indebtedness as well as the part not covered by indebtedness. If two railways have the same valuation the total "fair return" to which they are entitled apparently is, as a matter of law, the same even though the indebtedness of one represents two-thirds of its valuation, and the indebtedness of the other represents only one-half or one-third of its valuation.

In addition to the question of law, Senator Cummins' suggestion raises certain practical questions which he and everybody else would have great difficulty in answering. The statistics for the year ending December 31, 1922, are the latest complete statistics for all the railways which are available. We shall therefore use them to illustrate the matter.

At the end of 1922 the total amount of railway securities representing funded debt in existence was \$13,150,000,000, and the total amount of stock, common and preferred, in existence was \$9,141,000,000, the total railway capital issued being \$22,291,000,000. This, however, was what has been called the "gross" capitalization. The railway companies themselves owned \$2,621,000,000 of railway bonds, leaving \$10,529,000,000 of railway funded securities outstanding in the hands of the public. They also owned \$2,390,000,000 of railway stock, leaving \$6,751,000,000 of railway stock outstanding in the hands of the public. The "net capitalization" of the railways—that is the amount of their funded securities and stock actually outstanding in the hands of the public—was \$17,280,000,000. The total tentative valuation of the railways at the end of 1922 was approximately \$20,180,000,000.

Now, the first question that arises is as to whether the "gross" funded debt of the railways and the interest paid on it, or the "net" funded debt and the interest paid on it, would be used under Senator Cummins' plan as a basis for determining the difference between the indebtedness and the total valuation, and the return that might be earned on the equity in the valuation represented by the stock.

The difference between the tentative valuation and the "gross" funded debt at the end of 1922 was \$7,041,000,000. "Gross" interest paid upon the "gross" funded debt was approximately \$590,000,000. At least, this is what is indicated by a careful study of the statistics of the Interstate Commerce Commission. A return of  $5\frac{3}{4}$  per cent upon the equity in the valuation owned by the stockholders would have been about \$405,000,000. If the railways had been allowed to earn this and also the "gross" interest upon the "gross" funded indebtedness, their total net operating income would have been \$995,000,000. Even if they had been allowed to earn a return of 7 per cent upon the equity in the valuation represented by the stock their total net operating income would have been only \$1,080,000,000. On the other hand, a return of  $5\frac{3}{4}$  per cent upon the entire tentative valuation would have been \$1,116,000,000. It would appear therefore that if the "gross" capitalization had been used as a basis of calculation the adoption of Senator Cummins' suggestion that the railways be allowed to earn from  $5\frac{1}{2}$  to 7 per cent upon the equity in the valuation represented by the stock would have reduced the net operating income they were entitled to earn by from \$36,000,000 to \$137,000,000 annually.

Substantially different results are secured when the calculation is based upon the "net" capitalization. The net funded debt outstanding at the end of 1922 was \$10,529,000,000. The difference between this and the tentative valuation was \$9,651,000,000. That, on this basis of cal-



valuation, was the equity in the valuation represented by the stock. The "net" interest on the net funded debt was \$550,359,000. A return of  $5\frac{3}{4}$  per cent on the equity in the valuation represented by the stock would have been \$555,000,000. This, together with the "net" interest on the funded debt would have made the total net operating income the railways would have been entitled to earn \$1,105,292,000. A return of 7 per cent on the equity in the valuation represented by the stock—the highest return mentioned by Senator Cummins—would have been \$675,600,000. This would have made the total net operating income to which the railways would have been entitled about \$1,226,000,000. In other words on this basis of calculation, if under Senator Cummins' plan, the railways had been allowed to earn an average return of  $5\frac{3}{4}$  per cent on the equity in the valuation represented by the stock their net operating income would have been about \$11,000,000 less, and if they had been allowed to earn a return of 7 per cent on the equity in the valuation represented by the stock their net operating income would have been about \$110,000,000 more, than it would have been if they had earned a return of  $5\frac{3}{4}$  per cent upon the entire valuation.

The railways will and should strongly oppose any plan the adoption of which would result in any reduction of the return they are now held entitled to earn. They should do so because it is by no means certain that a return equivalent to  $5\frac{3}{4}$  per cent upon the entire valuation will, in the long run, be found sufficient to meet their financial requirements. Now, the purport and purpose of the criticisms that Senator La Follette has made against the ruling of the Interstate Commerce Commission, that the railways are entitled to earn a return of  $5\frac{3}{4}$  per cent upon their entire valuation, are well-known. First, the average rate of interest paid by the railways upon their funded indebtedness is less than  $5\frac{3}{4}$  per cent. Now, of course, if the railways were earning  $5\frac{3}{4}$  per cent upon their entire valuation the difference between the interest paid on indebtedness and the return earned upon the part of the valuation covered by indebtedness would be transferred to net income from which it could be paid out in dividends or used to make improvements. The total railway stock actually outstanding in the hands of the public at the end of 1922 was \$6,751,000,000. If the railways in that year had earned a return on their entire valuation of  $5\frac{3}{4}$  per cent the return earned upon the stock outstanding in the hands of the public according to La Follette's argument, would have been 8.75 per cent. He contends that this would have been too much, and his purpose in trying to establish the principle that the railways are entitled to earn a "fair return" only on the equity in the valuation represented by the stock is to reduce the amount that they may be allowed to earn upon the stock. If any attempt is made to modify the rate making provisions in accordance with his ideas, he and his followers undoubtedly will try to incorporate in the law the principle that the railways should be allowed to earn only about  $5\frac{1}{2}$  or  $5\frac{3}{4}$  per cent, not upon the equity in the valuation represented by the stock, but upon the stock itself.

The passage of any legislation which would reduce the return the railways are entitled to earn on their stock under the rulings of the Commission would emasculate and defeat the purpose of the rate making provisions of the Transportation Act and render it impossible for the railways in future to raise needed capital. The railways need to earn the average of  $8\frac{3}{4}$  per cent upon their outstanding stock which Senator La Follette complains they would be able to earn if the rulings of the Commission were carried out. They need to for two reasons. First, under the general financial and business conditions now existing no railway can sell at par any considerable amount of stock unless it is prepared to pay a dividend of 7 per cent on it. A man who buys stock in a railroad or any other business takes

risks that a buyer of bonds does not take. Investors will not buy stocks and take this risk without the prospect of receiving dividends largely in excess of the current rate of interest. Secondly, in addition to paying dividends large enough to enable them to sell stock, the railways need to earn over and above dividend requirements a substantial surplus which can be invested in non-revenue producing improvements.

Senator Cummins' suggestion should not be seriously considered by Congress. It is of very doubtful constitutionality. The Interstate Commerce Commission is much better qualified to pass upon the return the railways should earn than Congress. Finally, the present method of basing the return to which the railways are entitled upon the entire valuation is comparatively simple, while any attempt by legislation, or even by ruling of the Commission, to distinguish between the rates of return which should be earned upon the part of the valuation represented by indebtedness and the part represented by stock would involve those who made the attempt in complexities and difficulties from which they could hardly extricate themselves. The complicated intercorporate ownership of railway bonds and stock, and the consequent difference of about \$5,000,000,000 between the total railway capital in existence and the amount actually outstanding in the hands of the public should be sufficient alone to warn any well-informed person not to try to carry out by legislation any such plan as the one Senator Cummins has suggested.

## Concerning Consolidations

**M**OST OF THE PART of President Coolidge's message in which he discussed railway matters was devoted to the subject of consolidations. He expressed the belief that consolidation of the railways into a small number of competing systems would result in various advantages. He advocated modification of the consolidation provisions of the Transportation Act both to make easier consolidations which the railways may be willing voluntarily to make, and to enable the Interstate Commerce Commission to exert more pressure to promote consolidations. The fact that some existing provisions of the law retard rather than promote consolidations was long since pointed out by the *Railway Age* and their modification advocated. The developments that have occurred since 1920 and reasons why certain changes in the law should be made are well outlined in an article by Professor Julius Grodinsky, which is published elsewhere in this issue.

That advantages may be gained by combining many of the railway lines of the country with other lines is agreed by all well informed persons. There are many short line railroads which would be more serviceable to their own territories and to the country if they were acquired by large systems. There are many roads having a substantial mileage which ought to be merged with large systems of which they are already connections. For example, the merger of the El Paso & South Western with the Southern Pacific was a natural development and undoubtedly will be beneficial. The formation of the Van Sweringen system is uniting a number of small railways with larger ones in a way which will be beneficial to both the security owners and the public concerned.

President Coolidge in his message very wisely said, however: "We ought to approach the problem with such a latitude of action that it can be worked out step by step in accordance with a comprehensive consideration of public interest. Whether the number of ultimate systems shall be more or less seems to me can only be determined by time

and actual experience in the development of such consolidations."

The danger in the situation is that there will be too much optimism among public men and regulating bodies regarding the rapidity with which desirable combinations can be formed and concerning the increases in the efficiency and economy of operation that can as a result be effected.

The railways of Great Britain have since the war been consolidated into a few systems. The plan adopted differs from that provided for by our legislation in that the British systems were intended to be non-competitive, while ours are intended to be competitive. There was, however, in Great Britain among the promoters of the plan of consolidation the same optimism that prevails in certain quarters in this country regarding the improvements in service and the economics that would result. Therefore, the views regarding the results that actually have been secured in England which have been expressed by T. C. Powell, vice-president of the Erie, in a letter to the *Railway Age*, should be interesting to both railway officers and the public. Mr. Powell, besides being a railway officer of long and broad experience, is an extremely keen and astute observer and student of railway matters. He recently visited Great Britain, and in the letter referred to he says:

"It is very evident that the railway consolidation plans have not turned out as well as the government anticipated. In the first place, there has not only been a demoralization of the forces, but the fact that the groupings of the English railways move competition to the background, has established a condition in the minds of the employees and the staff of each of the consolidated groups that always results from monopoly, and the reaction from this is now shown in the adverse criticisms published in the newspapers.

"Apparently every effort to reduce expenses by reducing train service met with opposition, and the very purpose of the consolidations has therefore failed to such an extent that while I was in England there was an official statement from the railway side to the effect that so far from there being an immediate reduction in the expenses, such a result could not be looked for for years. By this they probably meant they could not dispense with a great many men on their payrolls except by converting them into pensioners, and, of course, the pensions would cost a great deal of money.

"Again, there has been delay in adopting common standards in each of the consolidations probably because each group wants to continue the long established colors and other designations upon which the individuality of each railroad has been built up."

Sir Henry Thornton, after having had experience as a railway officer in both the United States and England, is now as president of the Canadian National lines the head of the largest railway system in America in point of mileage. In a recent address he said: "Personally, I question from an administrative point of view the wisdom of enlarging any of the great railway systems of the United States, such as the New York Central and the Pennsylvania, because I doubt the ability of any railway president efficiently and effectively to administer any larger mileage than that of the railways I have mentioned, having in mind the density of traffic." He added: "Railway consolidation in the United States, in my judgment, should extend merely to the mopping up of smaller lines in the immediate territory of each large trunk line where the welfare of the community will be served by so doing, and I deprecate the formation of systems so large as to pass beyond the administrative scope of the head of the system."

We fear that much of the sentiment in favor of the consolidation of all the railways into a small number of huge systems is based upon theory rather than upon practical experience and study and knowledge of the way in which

the problems of organization and administration presented might be solved. Furthermore, we fear that much of this sentiment disregards the fact that the density of traffic of our railroads will continue rapidly to increase, and that the size and difficulty of the problems of a railroad system are to be measured almost as much by the total business it has to handle as by the number of its miles of line. Almost every railway system now in existence or which may be formed, if past experience is a criterion, will in twenty years from now be twice as big as it is now in total traffic handled, in its financial needs and in many other respects.

It does not seem desirable that the formation of a few huge systems should be unduly stimulated by governmental action. Furthermore, the fact must be clearly recognized that the stimulation of consolidations is no substitute for recognition of the conditions which now actually exist upon our railroads and for the application of a policy of regulation suited to those conditions. For example, if the promotion of huge consolidations on certain probably erroneous assumptions regarding the results of such consolidations should be substituted for a policy of so regulating the railways as to enable them as they now exist as a whole and by groups to earn a fair return the whole plan of consolidations would cause disaster and not benefit to the railways and the public.

## Equipment Buying in November

EQUIPMENT ORDERS in November totaled 90 locomotives, 13,038 freight cars and 215 passenger cars, valued roughly at \$44,000,000. Orders reported in October had a total value of approximately \$40,000,000 and those in September a value of about \$60,000,000. This makes a total of \$144,000,000 for equipment purchases to date in the present buying movement which began early in September with the Pennsylvania's order for 10,000 freight cars. Sizable though equipment purchases valued at \$144,000,000 in three months may seem to be, the amount of business done was not, however, spectacular, nor did it in any way break any previous records. This is probably for the best because in many respects it is a guarantee that the buying movement will be likely to continue over a longer period of time and partake less of the character of a sudden and spectacular flash such as could be said of the equipment buying movement last spring.

Observers and analysts of business conditions show remarkable agreement in their optimistic views and prognostications concerning 1925. It has been proved that—barring special circumstances such as strikes—railway prosperity synchronizes with the curve of business conditions. This means, of course, that if the country is to be prosperous in 1925, the railways similarly will be prosperous and it naturally follows that if the railways are prosperous they will be large buyers of the things they need. There are some who believe the railways may be specially favored. This view has been best indicated by the spectacular rise of railway shares on the stock exchange following immediately upon the election and attributed primarily to the decisive defeat of the radical element led by Senator La Follette.

Car and locomotive purchases are, however, but a part of railway capital improvements. The true situation is indicated best by the figures given in the statement issued in connection with the recent annual meeting of the American Railway Association wherein it is shown that authorized capital expenditures for 1924 have totaled \$1,077,297,000—making 1924 another billion dollar year—of which total \$513,497,000 has been for locomotives and cars, and \$563,800,000 for improvements of other kinds. The sig-



nificance of this is that the equipment purchases this year have been less than half of the billion dollar total. In 1923 the opposite was true. Expenditures for cars and locomotives in that year were \$681,723,991, while those for other improvements were \$377,425,435.

Equipment purchases in November were valued at approximately \$44,000,000. On the other hand, there were ordered 249,000 tons of steel rail valued at over \$10,000,000. Two alone of the many projects for new lines, second tracking, new stations and terminals, signaling, had a combined value of \$31,000,000. These two included the contracts let for the Illinois Central's new 165-mile cut-off from Edgewood,

DOMESTIC LOCOMOTIVE AND CAR ORDERS

Month	Locomotives	Freight cars	Passenger cars
January	125	6,020	29
February	85	18,365	293
March	283	35,846	237
April	100	11,189	131
May	107	435	101
June	1	387	31
July	83	533	149
August	8	4,751	164
September	101	22,520	250
October	135	11,853	188
November	90	13,038	215
Total, 11 months	1,118	124,937	1,788
1923—11 months	1,863	73,335	1,711
1922—11 months	2,091	132,247	1,706

Ind., to Fulton, Ky., a \$17,000,000 project, and the commencement of work on the Southern Pacific's new lines in Arizona to cost \$14,000,000. These two projects and the steel rail orders total \$41,000,000 but there was in addition a fairly extensive list of other projects including, notably, several important projects for new signaling, some construction work announced by the Grand Trunk to be done in Michigan costing \$792,000, a contract awarded by the Pennsylvania for a new coal pier at Sandusky, Ohio, cost \$805,000, etc. Lack of figures for the cost of all the contracts awarded for one project and another make impossible exact comparison with the \$44,000,000 November equipment figure, but it is apparent that as large as equipment purchases during the month may have been they were exceeded in value by the contracts let for other projects.

Equipment purchases for the first eleven months of 1924 have far exceeded the figures for the same period of 1923 in the case of freight cars and passenger cars, but this has not been true of locomotives. The locomotive eleven months' total for 1924 was 1,118, comparing with 1,863 in the first eleven months of 1923, and with 2,091 for the similar period of 1922. Freight car orders, however, totaled in the first eleven months of 1924 no less than 124,937; compared with 73,335 in the same period of 1923 and with 132,247 in 1922. Passenger car orders have totaled 1,788, the comparable 1923 and 1922 figures being 1,711 and 1,706, respectively.

Important locomotive orders in November included 50 placed by the Wabash, 10 ordered by the Missouri-Kansas-Texas, and 15 ordered by the Terminal Association of St. Louis. Important among the freight car orders were 1,000 for the Texas Company, 1,000 for the Atchison, Topeka & Santa Fe, 3,000 for the Norfolk & Western, 3,000 for the New York Central, and 3,200 for the Chicago & North Western.

All the 215 passenger cars ordered during the month were contained in the single order for the Illinois Central. This road has been a leader with the Pennsylvania in the present equipment buying movement, and the value of its purchases has exceeded the value of the big Pennsylvania freight car order. The Illinois Central has, since the middle of September, placed orders for 25 locomotives, 6,200 freight cars, 200 express refrigerator cars, 63 through passenger train cars, and 215 multiple unit coaches and trailers; these orders are reported to have a total value of \$25,515,870.

## New Books

*Structural Engineers' Handbook.* By Milo S. Ketchum, dean of the College of Engineering, University of Illinois. 1065 pages, 6 In. x 9 In. Bound in Leather. Third edition. Published by the McGraw Hill Book Company. Price \$7.

The present edition of this well-known handbook supercedes the edition of 1918 from which it differs in the addition of 169 pages of new material and through the substitution of specifications, standards and other information replacing superceded material in the earlier edition. The present edition retains the plan and arrangement followed in its predecessor. It is divided into two parts, Part I containing data, details, specifications, standards, etc., on steel frame buildings, steel and wooden bridges, tanks, towers and bins as well as on the substructures which they require; Part II including 316 pages, comprising structural tables relating to the properties of plates and structural shapes, bars, etc., and of their usual combination in chord members, girders, etc.

The distinctive feature of the book is the excellent treatment of the illustrations. While devoting much attention to design and affording a vast fund of information for the designer, a considerable portion of the book is devoted to details and in this respect it probably excels any other publication of general circulation now available. Among the new features in the present volume are sections devoted to the design of self-supporting steel stacks, additional data on steel mill buildings, steel office buildings, steel and timber highway bridges, steel railway bridges, retaining walls and stresses in stiff frames, the last named being presented largely in the form of charts giving the moments and stresses in several different types of frames covering practically all of the usual cases with which the designer is confronted by this perplexing problem.

*Condensed Catalogues of Mechanical Equipment—1924-1925.* 758 pages, 8¼ by 11¼ in. Flexible binding. Published by the American Society of Mechanical Engineers, New York. Price \$5.00.

The fourteenth annual volume of the Condensed Catalogues of Mechanical Equipment presents to the mechanical engineer, executive or purchasing agent a valuable source of comprehensive information. The catalogue section contains 527 pages of data describing the products of 430 firms, an increase of 60 firms as compared with the 1922 edition. This section, in seven parts, contains an alphabetical index and catalogue data on power plant equipment; testing, measuring and recording apparatus; power transmission machinery; conveying, hoisting and transporting machinery; metals, alloys and other materials; machine tools and shop equipment and finally, compressing, pumping, hydraulic and industrial machinery.

The directory section is alphabetically indexed with convenient cross references and the inclusion of trade names in the index serves as an additional aid in locating particular equipment. Under each heading has been entered the names and addresses of representative firms which manufacture that particular line. Some idea of the scope of this volume may be gained when it is considered that there are 3,900 classifications of equipment and 4,400 firms listed in the mechanical equipment directory section alone.

The final section is the professional service directory in which is classified the specialized lines of practice of A.S.M.E. members engaged in professional service work and the catalogue pages describing the qualifications, achievements and special services offered by various individuals and organizations. In the directory are listed 575 engineers and 346 classifications. The edition as a whole, although large in size is light in weight and easily handled.

*Pulverised Fuel, Colloidal Fuel, Fuel Economy, and Smokeless Combustion.* By Leonard C. Harvey. 466 pages, illustrated, 7½ in. by 10 in. Price \$18.00. Published by the Macmillan Company, New York.

This book presents to the reader the results of a thorough and intensive study of the various applications of pulverized fuel. A large part of it is devoted to descriptions of successful systems for handling and burning this type of fuel in power plants as well as in the metallurgical and railway industries. The underlying principles and the advantages and disadvantages that are liable to be incurred in the use of pulverized coal are fully covered.

The book has 17 chapters, the first six of which are devoted to a contrast of past and present day practices, a discussion of the combustion of pulverized fuel, fuel conservation, the difficulties to be encountered in the handling of pulverized fuel and the various systems of washing and conveying.

The remaining chapters cover the application of pulverized fuel to various industries. Chapter 15 discusses the firing of locomotive boilers with pulverized fuel and gives an account of the most recent applications on various railroads in both this country and abroad. Results of comparative tests with pulverized and lump coal are given as well as an interesting account of the various difficulties that were encountered and eventually overcome. The remaining portion of this chapter contains descriptions of the various types of equipment. The last chapter contains an appendix which includes tables and data on combustion and firing efficiency, air mixtures and water vapor, etc. There is also a list of pulverized fuel installations in various parts of the world and a bibliography of recent articles and publications on this subject. The text of the book is well illustrated with drawings and photographs.

*Eye Hazards in Industrial Occupations.* By Louis Resnick and Lewis H. Carris. 247 Pages, 6 in. by 9 in. Price \$1.50 with linen and \$2.50 fabrikoid binding. Published by the National Committee for the Prevention of Blindness, Inc., New York.

The National Committee for the Prevention of Blindness has been doing excellent work in bringing to the attention of industry and the country at large, the means of eliminating the causes of eye injuries in industrial occupations. This volume is intended to serve as a clearing house for the great fund of information regarding this particular hazard which has been developed by the numerous industrial associations, governmental agencies and individual corporations interested in accident prevention and health promotion.

The book has 10 chapters, with 59 illustrations and three appendices. The various chapters include such subjects as the nature and cause of eye injuries, the elimination of eye hazards by engineering revision, first aid treatment for eye injuries, the correction of defective vision and diseases affecting the eyes. Railway officers and safety inspectors will be particularly interested in the chapters on industrial lighting and safety education. They are well illustrated and the effects of poor lighting, the proper amount of illumination required in shop buildings, the education of officers and employees and the enforcement of safety rules and regulations, are discussed in an instructive and interesting manner. The last chapter reviews the safety movement and its effect on the eye hazards of industrial occupations. Appendix I gives a list of industrial poisons that present hazards to the eyes. Each poison is listed with its symptoms and the various kinds of occupations in which it is encountered. Appendix II consists of the goggle code of the American Steel and Wire Company. This is a list of the occupations in which the use of goggles is compulsory or desirable. Appendix III is a supplementary reading list on the general subject of eye hazards.

## Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books and Pamphlets

*Federal Ownership and Operation of the Railroads*, by Frederick H. Ecker. 11 p. Pub. by Metropolitan Life Insurance Co., New York.

*Is Unemployment Inevitable? An Analysis and a Forecast.* Relation of unemployment in England to various stages of business cycle. A continuation of the investigations contained in "The Third Winter of Unemployment," included in the book-list in the November 24, 1923, *Railway Age*. 388 p. Pub. by Macmillan, London, Eng.

*Personnel Administration: A Bibliography*, by William H. Rossi, and Diana I. Powers-Rossi. References to material on railroad personnel included. 350 p. Pub. by Williams & Wilkins Co., Baltimore, Md. \$5.00.

*Public Accidents in the United States.* Compiled by National Safety Council. Discusses causes and prevention, with particular stress on reducing the automobile accidents. "Tremendous strides have been made during the past two decades in controlling accident and injury to railway personnel and to passengers." p. 9. 36 p. Issued by National Safety Council, Chicago, Ill.

*Railway and Industrial Compendium.* Financial and other statistics of railways, maps, brief histories. Part II of the Commercial & Financial Chronicle. Dated November 29, 1924. 232 p. Pub. by Wm. B. Dana Co., New York City.

*Thirty-Eighth Annual Report of the Interstate Commerce Commission.* December 1, 1924. House Document No. 449, of 68th Cong., 2d sess. 80 p. Pub. by Government Printing Office, Washington, D. C.

*A Short History of the American Labor Movement*, by Mary Beard. See Index under "Railroads." 206 p. Pub. by G. H. Doran, New York. \$1.50.

### Periodical Articles

*The Fifth Estate*, by Arthur D. Little. Contributions to better human relationship that scientists and engineers have made, and can make. *Atlantic Monthly*, December 1924, p. 771-781.

*The Financial Structure of the Atchison*, by Cox and Trainor. First of series of analyses of financial structures of railroads. *Annalist*, December 1, 1924, p. 575.

*The Little Things That Make Ford's Railroad a Big Success*, by Samuel Crowther. Illustrated. *World's Work*, December, 1924, p. 130-139.

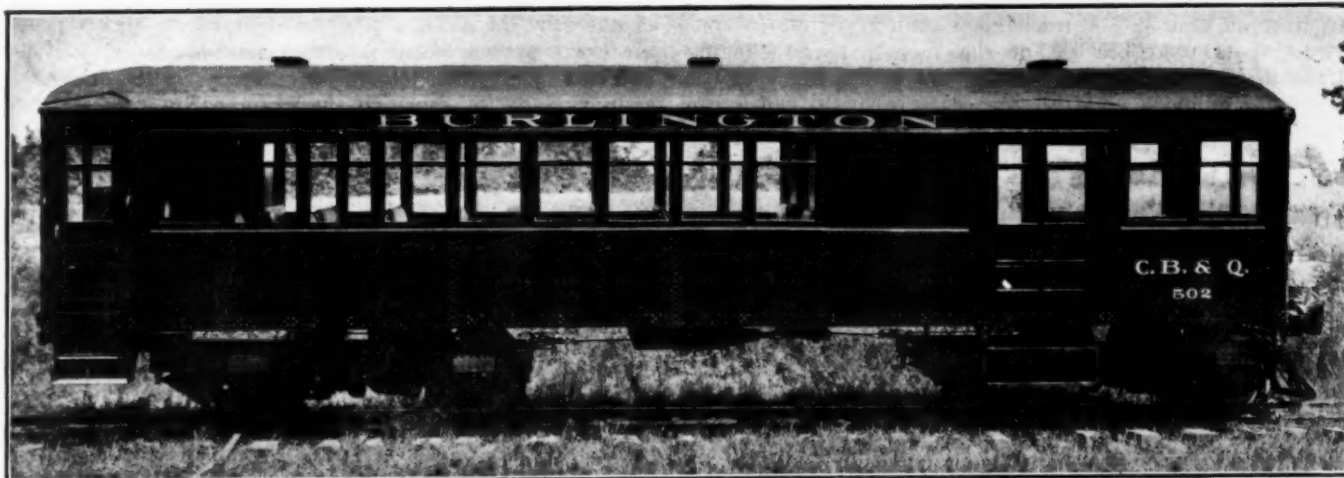
*Manit System for Measuring and Stimulating Labor Effort*, by Hasbrouck Haynes. Summary of Halsey, Taylor, Gantt, Emerson and Bedaux systems, p. 896. *Mechanical Engineering*, December, 1924, p. 896-897.

*Putting the Mississippi Valley on Wheels.* The car-building industry along the Mississippi and its history. *America At Work*, November 20, 1924, p. 9-13, 22.

*The Pennsylvania Railroad System—A Brief Historical Review*, by Samuel Rea. Illustrated. 3d of a series of histories of American railroads. *Shipper & Carrier*, November, 1924, p. 6-11, 37.

ONE HUNDRED THOUSAND DOLLARS is the estimated loss due to the wreck of a freight train on the Tennessee Central near Clarksville, Tenn., on November 26, when a dozen cars fell through a trestle, and, with part of the trestle, were burned up. The road was blocked four days. According to the accounts, the wreck was due to the explosion of a tank car loaded with gasoline.





Edwards Gasoline Rail Motor Car with a Motor on Each Truck

## Twin Motor Rail Car for the Burlington

Independent Power Units on the Trucks Permit Economical Operation Under Varying Conditions

**T**HERE HAS RECENTLY been built for the Chicago, Burlington & Quincy a self-propelled motor car which, in some respects, is radically different in design from any equipment yet built for a like class of service. The principle departure from conventional design has been the use of two complete and independent power units, one on each truck. This motor car is a product of the

Both front and rear trucks follow closely the conventional four-wheel passenger coach type of construction, with such modifications as are necessary to install the power plant. Wheels are 30 inches in diameter, rolled steel A.R.A. contour; outside journal boxes are used and are fitted with Hyatt roller bearings; the axles are four inches in diameter and are made of chrome nickel steel, heat treated. Coil springs are used over each journal box. One large transverse semi-elliptic spring is located under the bolster.

### The Power Plant

Each power unit consists of one Buda four-cylinder motor, 5-in. bore by 6½-in. stroke, developing 60 hp. at 1,200 r.p.m. A heavy-duty multiple disc clutch transmits the power to a four-speed transmission of the constant mesh type which, together with a special final drive and reverse mechanism, provides the same number of speed changes in both forward and backward directions.

The complete power plant is mounted on a sub-frame which is suspended within the regular truck frame by four cantilever springs attached to swing motion hangers. The connection from the final drive to the axle is with two chains running in oil tight housing. This method of mounting, which is patented by the builder, permits the frame containing the power plant to move vertically or horizontally and as there is no rigid connection between the driven axle and the power plant frame, the driving machinery is protected from rail shocks and vibration, which is essential to the life of the machinery in a self propelled car, and especially so when the power plant is on the trucks.

One 65 gallon gasoline tank is located under the car body, arranged for convenient filling from the outside. This tank supplies fuel to both motors.

Over each motor there is placed a trap door in the floor which permits access to the motor for making all necessary adjustments, removal of cylinder heads, grinding valves, etc. The motors are also easily accessible from the outside of the car from each side. The truck can be removed from under the car in a very short space of time, and with the truck out the entire power plant is accessible for all kinds of repairs.

Each power plant has a separate set of controls so



Interior View of the Passenger Compartment

Edwards Railway Motor Car Company, Sanford, North Carolina.

This car is equipped with two double trucks into each one of which has been built a complete power plant which can be operated independently or together as operating conditions may require. This construction serves to eliminate all direct motor vibration from the car body; eliminates universal joints, long drive shafts, angle drives and numerous gears. An additional advantage is the fact that no space is taken up in the car body for the motors. If one power plant should fail completely, the other unit remains to operate the car. This construction also has a maintenance advantage in that an extra or reserve power truck can be kept on hand and if a mechanical failure occurs, the trucks can be changed in about 45 minutes.

arranged that both motors can be operated separately or together as desired. A mechanical control, simple in construction is used because of the fact that in changing transmission gears, it is necessary for the operator to use the sense of touch and feel the gears in mesh, which can be done only with a mechanical control. For example, should the car be running with only one motor at a speed, say of 25 or 30 m.p.h. and the driver sees the necessity of using the second motor to ascend a heavy grade, he can start up the second motor and put it directly in high gear without any clash of gears as he can easily bring the gears in mesh by the sense of touch.

In some designs of self propelled railway cars, considerable power is taken from the motors operating the car for operating various accessories such as the air compressor, electric lights, radiator fan, etc. On this car, no power is taken from the driving motor for these purposes. The total horsepower output of the motors is used to propel the car.

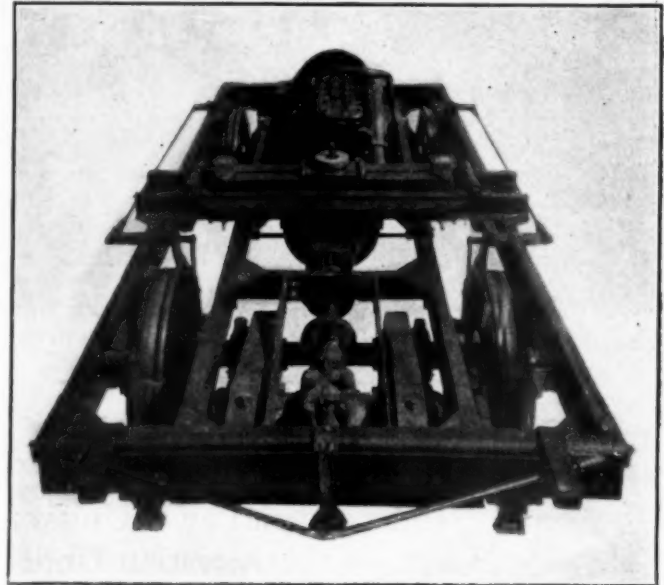
The two engine principle offers possibilities for economy in that it permits the use of one engine on level track and with light loads, and both engines on grades and for heavy loads. The power and fuel consumption thus keeps pace with actual needs. In handling heavy loads this method reduces to one half the amount of load and strain on the clutch and transmission gears as compared to cars with only one power plant, thus reducing the wear and maintenance of these parts. The car is so designed that when only one power plant is used, none of the parts or machinery of the second power plant are in motion (except the drive sprockets and chains). Therefore, there is no wear on the power plant that is not in use.

#### Additional Equipment

A Kohler automatic light and power plant is installed in the driver's cab. This plant furnishes 110-volt direct current for operating the lights of the car, driving the air compressor and operating the motors of the heating system. The lighting plant has 2,500 watts capacity and is driven

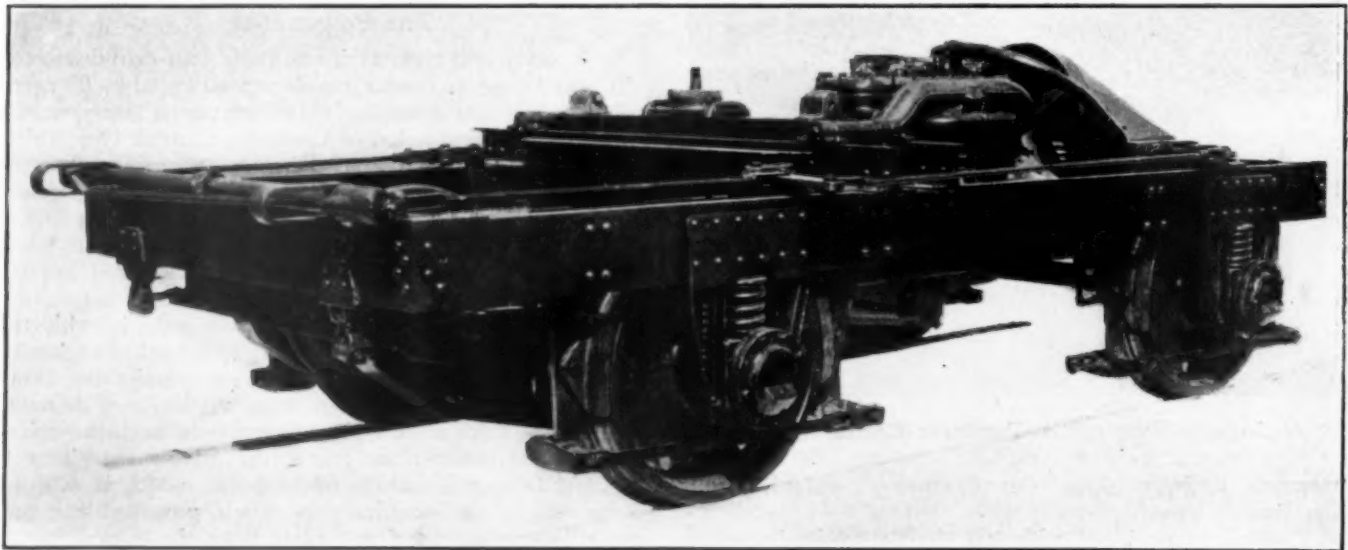
car. The air compressor is of the regular street car type, operated by the auxiliary power plant. In addition to this air brake system, there is an efficient hand brake system operated by a ratchet located conveniently for the driver.

In view of the fact that the motors drive separate axles and are in no way connected except through the rails, it



Top View of the Truck, Showing the Motor Suspension and Driving Arrangement

is not necessary that they be perfectly synchronized. Through the control system, the motors are synchronized near enough for all practical purposes. In operation no loss of power can be detected due to any failure of perfect motor synchronization. It is possible to cut either motor in or out while



Rear and Side View of the Truck, Showing the Brake Arrangement and Journal Boxes

by a small 3-hp. 4-cylinder motor, the complete unit occupying a floor space of only 15 in. by 33 in. In addition to the above electric plant, each driving motor is equipped with a generator, self-starter and a storage battery. This system will also supply current to several auxiliary lamps located in the car for emergency use. The electrical equipment includes a powerful 240-watt headlight.

A complete standard Westinghouse air brake system of the straight air type with emergency feature is installed on the

car is in motion. When 75-hp. motors are used, a maximum speed of 45 m.p.h. can be obtained on level track and with 100-hp. motors 55 to 60 m.p.h. The car will operate at the same speed in both forward or backward directions.

The car body is constructed of steel with wood interior finish. The center sills are 8-in. 20.5-lb. I-beams. The side sills are 3/8-in. by 3 1/2-in. by 6-in. steel angles; the cross members are pressed steel shapes. The side posts are steel



tees  $\frac{1}{4}$  in. by  $1\frac{3}{4}$  in. by  $1\frac{3}{4}$  in. These tees also form the car-lines and are in one continuous piece, running from side sill to side sill. The corner posts are formed from 12-gage steel and run from side sill to letter panel. The side sheeting and letter panel is 16-gage patent leveled copper bearing steel. The letter panel extends about six inches back on top of the roof and is flanged down to form a stiffener for the roof. The roof is of the turtle back type, extending the full length of the car. Roof boards are  $\frac{3}{8}$ -in. by  $2\frac{1}{2}$ -in. tongue and grooved poplar, dressed to a smooth surface, painted and covered with canvas bedded in white lead. The rear platform is of the enclosed vestibule type with trap doors over the steps. The floor inside is laid with yellow pine of double thickness with a deadening felt between the layers. The inside finish, consisting of doors, sash, partitions and panels below the rail, is birch, stained natural mahogany. The car has one toilet with dry hopper and a Dayton sanitary water cooler. Parcel racks are provided in the passenger compartment which run the full length on both sides over the seats. The seats are of the non-reversible type with pressed steel pedestals, wall and aisle plates, upholstered in leather. The seats on one side of the aisle are 52 in. wide for three passengers and 34 in. wide on the other side for two passengers. This leaves a 23-in. aisle through the car. The total seating capacity is 41 passengers. The principle dimensions of the car are as follows:

Total length of car.....	43 ft. 0 in.
Length over car body.....	42 ft. 11 $\frac{3}{4}$ in.
Length of baggage compartment.....	17 ft. 0 in.
Width of baggage compartment.....	9 ft. 1 in.
Length of passenger compartment.....	22 ft. 7 in.
Width of passenger compartment.....	9 ft. 1 in.
Width over sheathing.....	9 ft. 6 in.
Height from floor to ceiling.....	8 ft. 0 in.
Height from rail to top of car.....	12 ft. 4 in.
Height from rail to floor.....	4 ft. 3 in.
Bolster centers.....	25 ft. 6 in.
Total weight.....	39,000 lb.

Attractive electric light fixtures are provided throughout the car. Other equipment consists of signal bell, air sanders, alarm bell operated by air, electric classification lamps, fire extinguishers and hot air heating system. Special light weight standard M.C.B. couplers are provided at both ends of the car, fixed at the standard draw bar height.

## Supplemental Report on Nicetown Derailment

THE INTERSTATE COMMERCE COMMISSION has issued a supplemental report on the accident which occurred on the Philadelphia & Reading, near Nicetown, Pa., on Nov. 1, 1923, about 2 a. m., when a milk train was derailed by running through a misplaced switch, and three employees were killed. This derailment was reported in the *Railway Age* July 5, 1924, page 14. To run around a train standing on the main track the milk train was running through a third track, about one mile long, in which there are 15 switches leading to industries. These switches had no lamps. The movement through the side track was made by informal order, not in writing. The switch lock was found to be defective; it could be opened without a key.

The report of the supplemental investigation says:

"Instructions have been issued discontinuing the operation of trains over the third track, other than switch engines engaged in switching service, except when absolutely necessary and when the main track is obstructed; and a man is stationed on the front end of the engine of all such detoured trains for the purpose of watching for misplaced switches. The train which was involved in the accident has not been run over the third track since that time. It also appears that switch lamps have been placed on all switches and that the track walkers have been instructed to pay particular attention to the condition of the switch locks."

## Mail Transportation by Railroads

WASHINGTON, D. C.

ON JUNE 30, 1924, mails were carried under authorizations of the department over 231,020 miles of railroads, according to the annual report of the Postmaster General. The annual mileage of regularly authorized space units of the several sizes for carrying mails was 586,081,298.

The appropriation for the fiscal year for inland transportation by railroad routes was \$94,300,000. Request was made for a deficiency appropriation of \$4,250,000, but the bill in which it was included failed to pass in the closing days of the last session of Congress. Pending appropriation of the necessary amount by the next session of Congress, payments are being made to the extent of available funds. The expenditures for the fiscal year were \$98,325,501 (subject to adjustments), an increase of \$5,251,544 over those for the preceding fiscal year. Of this amount \$1,093,679 was expended for mail messenger service under a proviso in the appropriation act that not exceeding \$1,500,000 may be expended for mail messenger service.

Under the decision of the Interstate Commerce Commission the railroads are compensated for carrying the mails between railroad stations and between them and the several post offices, where so required by the Postmaster General, on the basis of the cost of such service plus 3 per cent. Where the department has been able to secure this service by the establishment of mail messenger service at less cost it has done so, resulting in a material saving during the fiscal year. The annual rate of expenditure for the service on July 1, 1923, was \$1,747,612 at 8,649 points. On June 30, 1924, the annual rate had been reduced by the method stated to \$1,372,932, a reduction of 21.4 per cent, and the number of points had been decreased to 7,589, a reduction of 12 per cent. On July 1, 1923, the average cost of the service at the offices covered was \$202.05. On June 30, 1924, it had been reduced to \$180.91.

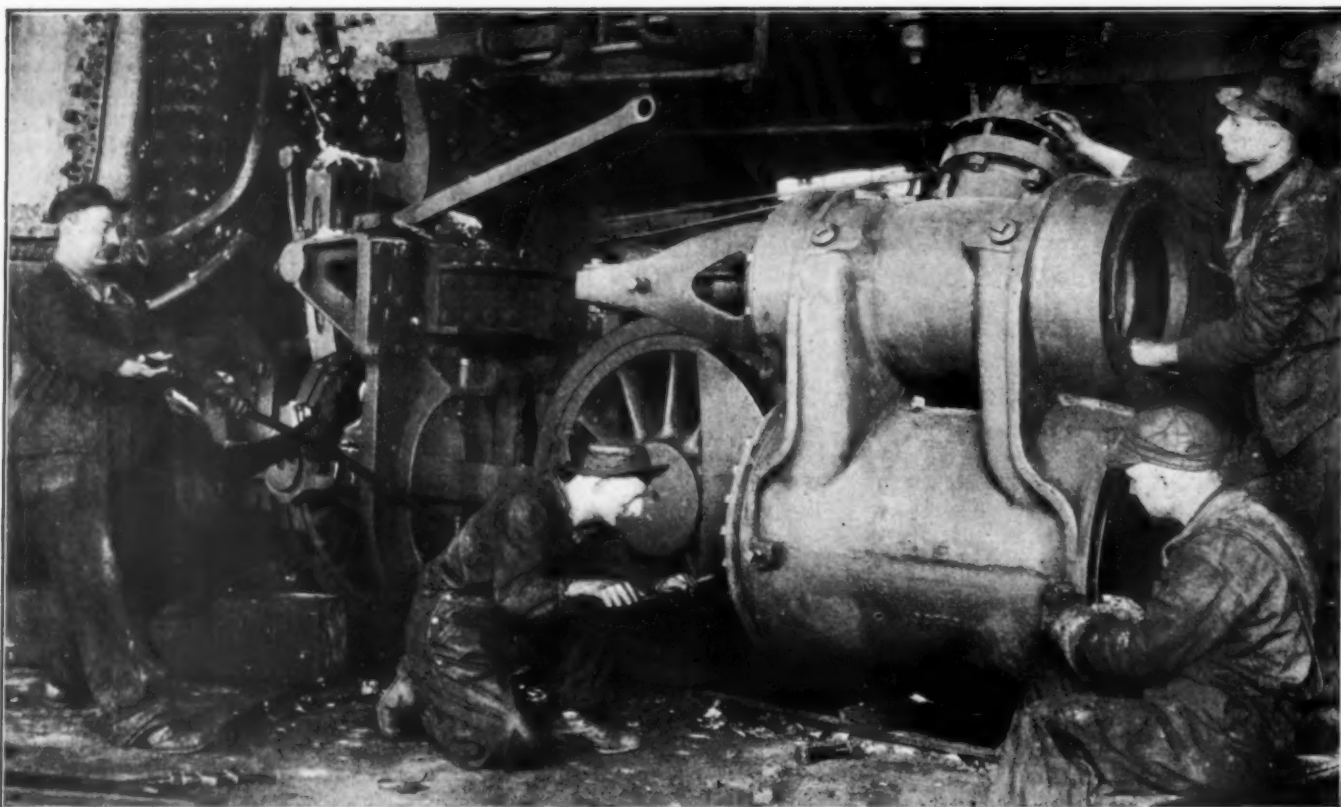
In the matter of the application of the railroads in the New England section for a re-examination and refixing of rates for railway mail pay, the commission rendered its decision on December 13, 1923, finding the fair and reasonable rates of compensation for the future upon the lines involved and for the services connected therewith. These rates resulted in an increase in the annual compensation for the eight New England lines concerned of about 35 per cent, or \$1,192,990 a year. The commission denied the application of the roads for a retroactive application of the new rates to begin at a date not later than the filing of the railroads' petition. This matter has been reopened by the roads on an application for a rehearing. As for the application of the short-line railroads in Intermountain and Pacific Coast states for a re-examination and refixing of rates upon their lines, the taking of testimony was finally completed in Washington and the case briefed, argued, and submitted for decision. The opinion has not yet been rendered.

On June 30, 1924, there were 5,135 full and apartment mail cars owned by the several railroads and operated for the Postal Service. Of these 2,992 were steel and steel underframe cars, or 58.27 per cent of the whole number.

Eight new steel full mail cars and 152 new steel apartment cars were built during the year. Eleven steel full mail cars were standardized, and 21 steel apartment mail cars were equipped with electric lights instead of gas.

Progress has been made towards standardizing mail cars and making them safer for service requirements, and also in retiring old and unsuitable mail car equipment.

Besides the 160 new all-steel full and apartment mail cars built during the year, there were changes made in 651 cars to bring them up to standard. At the close of the year there were in operation 4,843 railway post-office trains, covering 208,517 miles of R. P. O. service, with 273,359,735 miles of annual travel and 15,472 closed pouch trains.



By Hine from Ewing Galloway, N. Y.

## Modern Personnel Administration and Its Application to the Railways

By Dr. Henry Clayton Metcalf

Director, Bureau of Personnel Administration, New York

**E**Mployees of American railroads would welcome the adoption by their roads of modern, constructive methods of personnel administration. That is the inevitable conclusion to be drawn from a critical reading of the essays submitted in the *Railway Age* contest on co-operation last spring by 372 railroad workers.

Two groups of recommendations contained in those essays are, in the judgment of the writer, of such compelling significance for railway executives and their employees as clearly to warrant special analysis and constructive treatment. They are:

4. "Improve joint relations for negotiating collective agreements and for adjusting and avoiding grievances."
5. "Centralize and adopt modern practice with reference to personnel administration."

The number of essays proposing group four recommendations is 141; the number advocating centralized personnel practice is 118. Expressed in another way, 259, or 70 per cent, of all the contestants express in positive terms their convictions that the time has come for railway executives to take a more deliberate, conscious, *organized* responsibility toward the employer-employee relations.

If we are justified in our former article\* in concluding that as a whole these essays fairly represent a cross-section

of the convictions of those railway employees who have been long enough in the service to have given serious thought to the problem of employer-employee co-operation, then these fundamental recommendations cannot be pigeon-holed with impunity.

It is the purpose of this article to point out the significance of the recommendations calling for the adoption of a modern personnel administration. The third article will present some pressing questions regarding the employee representation movement.

### What the Employee Should

#### Strive For in His Work Relations

We shall never have efficiency and harmony in work relations until we understand how man's innate impulses—the desire to create, to possess, to associate, to receive a square deal, etc.—are demanding adequate, just expression in the industrial relations. Nothing influences the great majority of us for good or ill so much as the work environment. The work influences operate all the time; they deal with the most tangible, elemental stuffs of life; they are highly dynamic; they are all-comprehensive enough to "include both heaven and hell." "Environments, as well as people, have children."

In this life molding environment, highly important is it therefore that every worker should have a fair, adequate knowledge of his employer and the work he is to perform. He should have a fair selection for his job, be the recipient of

\*"What Railroad Managements Should Do to Secure Co-operation from Their Employees," *Railway Age*, November 29, 1924, page 982.



the very best that physical, mental and trade tests can give him. Since industry is his chief training school, he should have instruction in his work; have his bodily integrity guaranteed; receive initial and graded, just remuneration; be protected against all preventable hazards; be given a chance to learn the business; work reasonable hours; have open channels through which to express himself; be assured and convinced that merit will win, freely and fearlessly taking part in all activities that train and develop personal power.

As indicated in the accompanying chart of a personnel department, the individual worker is the center of an organic personnel procedure. By "individual worker" I mean all who function in the work relations—administrators, managers, supervisors and the mass of skilled, semi-skilled and unskilled. The final source of values resides in the most effective use of our physical, intellectual and spiritual powers. *The problem* of problems now confronting industry is the conservation of human energy. This is what every worker should strive for in his work relations. Every worker has a right, through the proper channels, to have the values expressed through the employment, health and safety, education and training, research, service and joint relations, divisions of the accompanying chart function as a daily asset in his work relations.

#### What the Employer Should Strive For

Every employer who senses the trend of the times; who realizes how human worth is being scientifically studied and how conduct is being measured and controlled; who believes that democratic forces are literally reshaping the world of work, will strive to make the above organic development of the employee in industry a vital business asset. He will do this by scientifically studying sources of labor supply; by attracting, on the basis of *known* work needs, the most desirable applicants for work; by employing the best methods of selecting, placing and protecting them; and by developing the best methods of instructing, training and retaining them. Believing that his best business asset is the whole-souled enthusiastic interest of all his employees in the problem of improving the *quality* of their *own* labor, the wise employer will do everything possible to make *personality* count.

#### What Society Has a Right to Expect from Employers and Workers

Society has a right to expect, and is increasingly demand-

ing from those responsible for the conduct of private industry, the fullest conservation of natural and human resources; continuous and efficient use of society's productive resources; continuous improvement in the standard of life of all the workers. Society is looking to our industrial leaders to evolve—there *is* evolving—a new business philosophy, a philosophy demanding that business conduct shall square with sound social utilities and wholesome human work relations.

#### What Is Personnel Administration?

The true understanding of this threefold relationship of

employer, employee and society, scientifically understood, leads directly to the conception of organic unity, mutual understanding, harmony and efficiency. In helping to administer this integrating relationship, personnel administration is performing its major function.

Personnel administration deals with the human relations of men and women in their efforts to earn a living. It discovers the scientific methods by which the creative capacity of each individual may be discovered and developed, to the end that he may give more productively to society, and gain greater satisfaction from life. It analyzes and directs the practical problem involved in employment, health and safety, wage payment and incentives, education and training, employee service, and joint control. This it does by translating for industry, commerce and government the truths of biology, physiology, psychology, economics, industrial history, education, sociology and ethics.

Personnel administration recognizes that man is a many-sided being, has many ties that bind him as an organic whole; hence it recognizes the interrelation of the day's work and the

values of life—economic security, health, recreation, friends and family, character, art, knowledge and religion. It studies the industrial relations of each organization in the light of *local conditions, traditions and needs*, and promotes understanding and good will through contact, conference, confidence and an integrated mental and spiritual teamwork. It helps work out within the work relations the terms of a voluntary covenant of equal citizens of the commonwealth.

#### Historic Background of Personnel Administration

Many historic currents mingle and meet in personnel management. The reign of the machine—its narrow specialization, its strain and monotony, its tendency to

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#### Some Pertinent Personnel Questions

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1. What should every employee strive for in the work relations?
  2. What should every employer strive for in the work relations?
  3. What has society a right to expect, and what is society with increasing determination demanding, shall be the employer-employee relations?
  4. What is the science and art of personnel administration?
  5. What historic forces or movements have brought personnel work as a major business function to its present status?
  6. What are the prerequisites of an organic personnel program, and how proceed to develop a constructive personnel procedure?
  7. What is the labor audit and what, wisely used, can it do for owner, manager, worker, society?
  8. What, in our most progressive establishments, is sound personnel procedure accomplishing, and what, under wise direction, may it safely be expected to do for industry, commerce, government and education?
  9. What has it to do with the progress of sound opinion in the work relations?
  10. What wholesome influences may it have on the feelings of the entire work force?
  11. How may it operate so as constructively to modify the manners of management?
  12. What are the traits, training and experience necessary in the man or woman who is responsible for the personnel work?
  13. What position should the personnel director occupy in a company?
  14. What should be his relation to: (a) the other executives, (b) the employees, (c) the public?
  15. Whatever we may think about it, is personnel administration a permanent problem and is it, bearing in mind local conditions, equally applicable to all kinds of industry—railway, factory, bank, store, etc?
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mechanize and dehumanize the unskilled workers; its separation of owners, managers and workers; the difficulties and dangers of long-range managements, breaking the spiritual bonds and creating an atmosphere of doubt, suspicion and misunderstanding, must be understood and turned into wholesome channels.

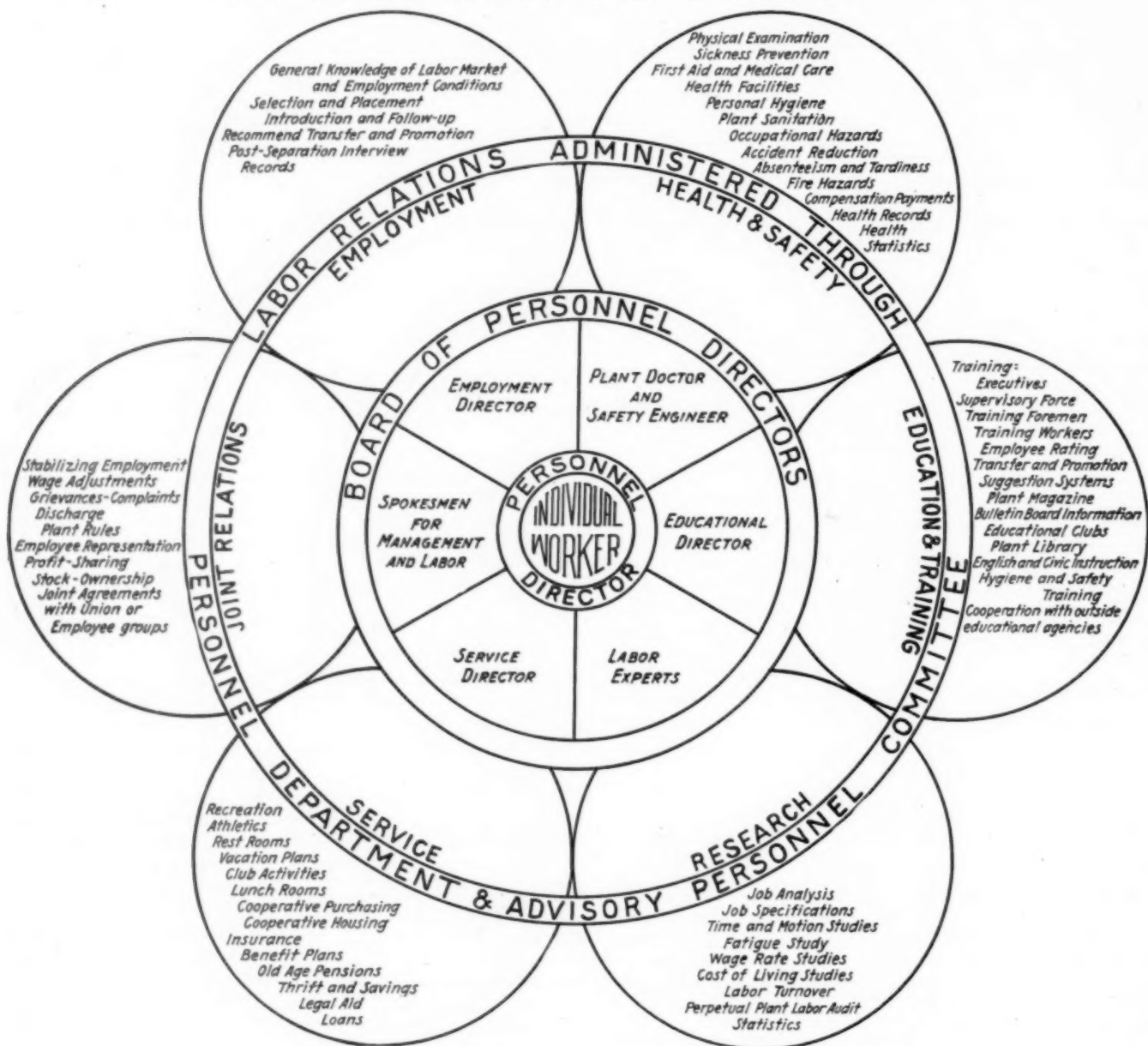
The influence of the "efficiency movements," vocational guidance, scientific management, the employment management movement during the war and the years immediately there-

derstanding and sympathy have combined in crystallizing the present personnel movement.

### Personnel Prerequisites

Launching upon a personnel program in these times without adequate preparation is not only futile, it is positively dangerous. There are no business problems so fundamental, so dynamic, as those flowing from the human relations. Indeed, properly comprehended, these constitute all there is of

## PERSONNEL DEPARTMENT - CHART OF AUTHORITY



after; the organization of the early industrial relations groups, the influence of the National Association of Corporation Schools, the National Personnel Association, and the work of the present American Management Association; the quiet, constructive work being done by the Taylor Society; the emphasis on the human work relations of the various engineering societies; the scientific foundations for future personnel procedure being laid by such organizations as the Personnel Research Federation—these and many other influences emanating from the scientific search for the true sources of wealth and from the deepening of human un-

business. No concern should launch upon a personnel program without being certain that it has devoted its best ability to developing its labor and prepared the way for passing it along. There should be a clear determination of administrative policy, a clear demarcation between this policy and those who are to execute it—the management. The executives should know the direction it is taking, the speed it is making. The executives should be thoroughly trained in the organic personnel policy until they are completely sold to it and are competent and determined to make it a daily business asset.



Channels should at all times be free so the rank and file may have unobstructed access to the ear of management. The best preparation for safety in working out a personnel program is a labor audit.

### The Labor Audit

The labor analyst does not undertake his work as advocate of any preconceived reforms or betterments. He does not pose as apostle of any new and enlightened labor creed, nor as installer of any *standardized* technique which purports to rectify industrial personnel difficulties. He aims rather to fill the role of unbiased, impartial investigator. His activities lay claim to pertinence chiefly in that he has the time, the training, and the experience to make an unbiased investigation of the human relations problems—a privilege which normal business exigencies render impossible for the administrator; and that, after correlating his data, he arrives at conclusions through the applications of principles and laws regarding labor relations which are as basic and fundamental as those utilized in the solution of the problems of mechanics, physics, or any of the material sciences.

An analysis such as the labor analyst attempts is founded upon facts concerning the particular conditions in the industry studied, and expressions of opinion from the administrative organization, the supervisory force, and a considerable number of outside agencies. The former pictures to him the actual situation, the latter reveal the *feelings* of the executives and working personnel toward it, and, whether correct or erroneous, give *factual* evidence of their reaction to the situation as it appears to them.

The labor analyst is not primarily interested in what has transpired in the past or the reasons therefor except in so far as the past helps him understand present conditions. The present state of the industry affords him the factual basis for his survey. He is not, however, intrinsically interested in this. If present-time personnel activities are not entirely commendable, it is not for him to criticize. If these activities are well-administered, it is not for him to praise. His mission is to present a plan and policy for the *future* based upon the facts of the present and formulated from the principles governing human conduct in industry. Present difficulties he looks upon, therefore, only as opportunities for future improvement and their mention in his report is *solely* in this relation.

From the above statements it will be seen that the labor audit incorporates:

1. The principles and policies that the labor analyst believes should control in the conduct of labor problems.
2. The facts upon which his conclusions are founded.
3. His reasoning and mode of thought in making his conclusions.
4. The recommendations he believes should be gradually put into practice.

The contents of such a labor audit fall into: (a) the employment organization—physical working conditions, labor turnover, job analysis, plant employment and training problem; (b) wages, total earnings, methods of pay, employee service provisions; (c) outside economic and industrial forces which any organization sooner or later must adjust itself to, such as economic beliefs, employees' associations, trade unions, workers' representation, labor legislation, court interpretation, community relations, etc.

Such a standardized procedure has been used in a wide variety of industries. It is just as essential to sound business conduct as is the financial audit, physical analysis or any other business tool. Wisely conducted, a labor audit is the most helpful *educational processing* in sound human relations any business can utilize. It compels systematic conferences of the most vital sort among executives; it establishes

the right attitude of mind; it assembles much widely scattered needed information; it promotes a clear understanding of current as well as an intelligent redefinition of the future plant labor policy; it brings to the service of a company knowledge on best personnel procedure and methods followed by other plants and related industries, all of which helps determine scientific standards for the regulation of plant employment and the stabilization of plant labor relations. The labor audit helps localize authority, define responsibility, secure precise co-ordination of effort needed to interpret, transmit and execute the personnel policy adopted.

The labor audit is of distinctive use to (a) the management, as a statement of current plant conditions and an estimate of business, human and social working efficiency. Its contents provide the most profitable topics for discussion and for educational work in executives', foremen's and workers' conferences. It may be made an important manual for instructing new executives in company labor policy and its operation. (b) To the personnel director the labor audit is an essential instrument, embodying the facts of every aspect of plant labor relations. It reveals the strength and weakness of an organization, measures the degree of effectiveness of the labor policy pursued, and indicates improvements for adoption. Systematically followed up, it becomes a scientific budgeting of the personnel department. Incidentally the systematic arrangement of the labor audit topics may suggest a helpful classification for personnel filing methods. (c) To the work force the labor audit is an instrument of penetrating inquiry into plant labor policies and practices. In so far as these are found to be unscientific, detrimental to labor welfare, anti-social, the audit becomes an instrument of instruction and protection to the worker. As an instrument of conference and contact, it powerfully operates in opening up a double track channel for communication and constructive co-operation in passing management's policies down the line to the workers, and in returning to management what's on the workers' mind.

The labor audit is surely coming to be recognized as the most helpful ally management can use in establishing a sound personnel procedure. It furnishes a scientific basis for a sound judgment and enlightened opinion in the work relations; it favors a fair expression of the feelings of the entire work force; it operates most wholesomely on the manners of management; it makes all parties affected by it—owners, administrators, managers, workers, consumers—realize their interrelations and joint dependability. Properly used, no instrument can help us better understand the scientific business and spiritual bonds in industry—that is, the science and art of personnel administration—than the labor audit.

### The Personnel Director

It is now clearly recognized in our progressive businesses that the far-reaching recommendations of the labor audit cannot be put into practice without the highest type of leadership. Here surely the right personality is required to inspire sympathetic understanding and co-operative effort. The basic traits of health, sound intelligence; absolute, fearless honesty; a capacity for effective work; a sober, constructive imagination; sound judgment, tact, true courage, and a genuine love of people, are essential to safe personnel guidance.

If possible, the one who is the counsel and guide in personnel matters should be selected from the workers, one who knows the problems awaiting solution and who is keen in sensing personnel policy, methods, needs. He should be thoroughly trained in the philosophy, principles and tested technique of the best in personnel administration. There is now available a vast store of information and technique constructively applicable to the human relations problems. A

select bibliography on personnel administration about to be issued, covering the years 1919-1923 only, reaches 3,000 books, reports, pamphlets, articles, etc. This gives some idea of the task confronting the personnel director. These contributions are far ahead of the earlier material in this field because of the growing appreciation of scientists regarding the significance of personnel work. Biology, in stressing hereditary quality; psychology, in its rapid appreciation of the need of conserving man power and through its proven methods of measuring and controlling human behavior; statistics, as applied to the many personnel problems of health, safety, turnover, absenteeism, rates, standards for promotion, etc.; the interest of economics in helping humanize industry; sociology, in stressing the significance of our social inheritances; and ethics and religion, in trying to give us all a more practical, hopeful understanding of life values—these and other fields of science are the essential tools of the personnel director.

The personnel man or woman who today counsels with administrators on the formation of sound labor policies; who is successful in selling the labor policy to the supervisory force; who faithfully discharges the duties and responsibilities involved in maintaining the needed labor force; who constructively co-operates with employment manager, doctor and nurse, safety engineer, educational director, service manager, research assistants; who is an industrial statesman in leading employees and employers into the covenant of a true co-operation, must possess the right basic, native equipment and, as a result of his training and experience, *think* and *act* historically, scientifically and socially. Anyone who is familiar with the soundest personnel work in business today knows full well that it is primarily the product of the highest type of leadership. The experience of about 15 men and women in the United States, who have developed well-rounded personnel programs, clearly proves this statement. No phase of business management calls for a higher grade of leadership than personnel management. No major business function should exceed in dignity, in constructive influence, in compensation that of personnel director.

Personnel administration then, as the writer conceives it, is destined to become one of the most comprehensive and constructive professions of the near future. Whatever the future form of organization and control of industry, fundamental human values remain the same and require the guidance of trained leaders. Hence, personnel administration is a permanent problem.

One of the chief causes of dissension between employers and employees in the past has been due to the fact that the worker has been regarded not as an organic unit, but as a part of the machinery. He has become mechanized, and often lost in the long-range management of large-scale industry. The modern movement along the lines of creating within industry departments of personnel administration is doing much to rediscover the individual and adequately protect his physical, intellectual and spiritual powers—in a word, *to give him a square deal*.

Two dominating threads of thought run through the humanistic sciences upon which all sound industrial relations must be built, (1) the determination to discover, train, apply and conserve *human worth*; and (2) the crying need of efficient *co-operative action*.

Now the best diagnosticians and the best personnel administrators in the world cannot progress very far in the solution of the difficult, delicate and complicated problems of the human relations in industry unless those who *determine* and *administer* business policy, the higher executives, have the right ideals, are properly instructed and trained in the newer methods, and are *sympathetic* with the newer point of view.

The fact is, modern business needs a scientific, humane, dynamic creed. Business needs a democratic creed of

ordered liberty and reciprocal solidarity. Given this and the foundations will have been built upon which may be erected a sound and satisfying industrial structure.

## Appropriations Recommended for I. C. C. and Labor Board

WASHINGTON, D. C.

**A**PPROPRIATIONS of \$4,913,500 for the Interstate Commerce Commission and \$296,805 for the Railroad Labor Board for the fiscal year ending June 30, 1926, are recommended in the estimates of the Bureau of the Budget transmitted to Congress by the President with his annual budget message. In the case of the commission this represents an increase of \$271,636 as compared with 1925, although the commission had estimated its needs at \$7,364,496. In the case of the Labor Board this is a reduction. The estimates are as follows:

### INTERSTATE COMMERCE COMMISSION

Appropriated for 1925.....	\$4,272,284
Adjustment of salaries, field services (H. R. 9561).....	19,580
Supplemental estimates submitted for 1925.....	350,000
<b>Total for 1925.....</b>	<b>\$4,641,864</b>
Budget estimate for 1926.....	4,913,500
<b>Net increase .....</b>	<b>\$271,636</b>

This net increase of \$271,636 includes reductions from \$2,148,760 to \$2,100,000 in the general appropriation for expenditures necessary in the execution of laws to regulate commerce, involving a reduction in personnel from 798 to 777 employees; from \$125,000 to \$124,000 for printing and binding; and increases from \$553,284 to \$600,000 for 18 additional employees to provide for adequately policing the accounts of carriers; from \$375,000 to \$500,000 for the promotion of safety of employees and travelers upon railroads, to adjust the compensation of 1 chief inspector, 2 assistant chief inspectors, and 54 inspectors to rates paid to locomotive inspectors, to provide for 18 additional inspectors to inspect the installation of train control and block signal devices ordered by the commission, and to provide adequate travel expenses for all inspectors; from \$300,000 to \$450,000 for locomotive inspection, to adjust the compensation of 1 chief inspector, 2 assistant chief inspectors, and 50 inspectors as provided by law, to employ 15 additional inspectors authorized by the act of June 7, 1924, to provide adequate allowances and traveling expenses for all inspectors, and to provide for the employment of 1 attorney and 2 additional clerks to handle legal work and increased clerical work. For valuation of property of carriers an estimate of \$1,000,000 is submitted for 1926 to enable the commission to prosecute the recapture of excess earnings and for carrying on a progressive program in bringing to completion the work of valuation of the assets of carriers. If the supplemental estimate of \$350,000 for this item is passed by Congress in the second deficiency act, 1924, now pending, \$1,000,320 will be available for the fiscal year 1925.

### RAILROAD LABOR BOARD

Appropriated for 1925.....	\$322,200
Budget estimate for 1926.....	296,805
<b>Reduction .....</b>	<b>\$25,395</b>

This reduction of \$25,395 includes reductions from \$246,940 to \$231,920 for personal services involving a reduction of four in the number of employees and adjustment of salaries to a basis comparable with rates in other Government activities; from \$63,260 to \$53,885 for expenses; from \$12,000 to \$11,000 for printing and binding.



# Progress of Consolidation Since the Act of 1920

## Thorough Study of the Present Situation—Numerous Consolidations Already Accomplished—Need of a Clarified Law

By Julius Grodinsky

Instructor in Finance, Wharton School of Finance and Commerce, University of Pennsylvania.

**A**MONG THE IMPORTANT PROVISIONS of the Transportation Act, 1920, are those relating to railroad consolidation. In this act the Interstate Commerce Commission is given general power over the future consolidation of American railroad companies. The consolidation of railroad properties is now subjected to the control of the Interstate Commerce Commission, which is directed by the Act to supervise these consolidations in the public interest. Paragraph 2, section 5, provides for so-called incomplete consolidations, permitting one carrier to control any other carrier "either under a lease or by the purchase of stock or in any other manner not involving the consolidation of such carriers into a single system for ownership and operation." Such a consolidation does not eliminate the corporate identity of either of the contracting parties. The ownership of a carrier is merely transferred from one party to another, either through a lease, operating contract, the transfer of the stock itself, or in any other manner. After such a consolidation the properties are still separately operated.

The interests of the railroads, however, would be better served by the consolidation of individual railroad properties in a certain region into one new complete corporation—a consolidation that eliminates entirely the separate corporate existence and separate operating staffs of the formerly independent companies. Only in this way can all the possible savings in operating expenses be realized; duplication in operating staffs would be eliminated; the number of reports required by various government bureaus would be reduced, and the number of separate corporate organizations would be lessened with corresponding savings in overhead. The supervision over such consolidations is elaborately provided for in the Act (sections 4 to 6, inclusive). The commission is directed to "prepare and adopt a plan for the consolidation of the railroad properties of the continental United States into a limited number of systems." The commission is then directed, after it has agreed upon a tentative plan, to give it publicity and hold hearings all over the country with a view to preparing a so-called final plan. The commission after the conclusion of these hearings, shall then adopt a final plan and publish the same; but it may at any time thereafter, upon its own motion, or upon application, reopen the subject for such changes or modifications as in its judgment will promote the public interest. All so-called complete consolidations must thereafter be in harmony with the plan adopted by the commission. Subject to the above, railroad carriers may consolidate their properties into one new corporation for ownership, management and operation, under the following conditions: first, the consolidation must be in harmony with the plan of the commission, and secondly, the bonds at par of the new corporation, together with its capital stock at par, shall not exceed the value of the new property as determined by the commission. The value of the properties must be determined by the commission under Section 19a of the Act, and "it shall be the duty of the commission to proceed immediately to the ascertainment of such value for the properties involved in the proposed consolidation upon the filing of the application for such consolidation."

Section 5, which thus makes such elaborate provisions to

lay down the guiding principles of future consolidations, is not entirely clear as to the status of consolidations voluntarily proposed by the carriers, pending the preparation of the commission's final plan. The commission, in the summer of 1921, adopted and published a so-called tentative plan to serve as the basis for discussion in the hearings which the commission was required to take in order to prepare the so-called final plan of consolidation. The hearings required by the law have already been held; but the final plan is not yet ready for publication. The Act does not make clear the status of any proposed voluntary complete consolidation pending the adoption of this plan. The Act does not state whether or not, how, and to what extent, voluntary consolidations shall be allowed in the interim. This problem was brought directly to the attention of the commission in the cases of the Pittsburgh & West Virginia and the Boston & Maine. The Pittsburgh & West Virginia Railroad Company, owning all the stock of the West Side Belt Railroad Company, applied for permission under Paragraph 18, Section 1, to acquire the property and franchises of the latter company. This application was dismissed on the ground that such proposal does "not fall within the prohibition of that paragraph." The road operated by the West Side Belt was in operation in interstate commerce prior to the effective date of Paragraph 18; and in the view of the commission, that paragraph applied only to railroads constructed after the passage of the Act of 1920. The Pittsburgh & West Virginia then applied to the commission under Section 20a to issue its capital stock in exchange for the capital stock of its subsidiary, the West Side Belt Railroad Company, in connection with the purchase of the property and franchises of the latter company. This, it is obvious, was an indirect way of accomplishing a complete consolidation, involving the disappearance of the corporate entity of the West Side Belt Company. The Interstate Commerce Commission appreciated the significance of this application and took occasion to make clear its view upon the meaning of Paragraph 6. Technically speaking, said the commission, a consolidation may be defined "as a union of companies where a new corporation is created to take over the powers and properties of a consolidated corporation," but the commission declared that the language was broad enough "to cover any form of union under which 'properties theretofore in separate ownership, management, and operation' pass into the possession of a single corporation for ownership, management and operation." In view of the fact that the Pittsburgh & West Virginia had not applied to the commission for permission, under Section 5, to purchase the property of this subsidiary, the issue of capital stock would have been made to effect an illegal purpose. Hence, the petition of the carrier was denied. The commission also pointed out the distinction between consolidations under Paragraph 6 and those under Paragraph 2. No authority for consolidation under Paragraph 6, said the commission, may be granted "until we have adopted a plan of consolidation under Paragraphs 4 and 5; while there is no similar limitation upon action under Paragraph 2."

The commission, recognizing that with the Act as it then stood, consolidations would be "frozen" until the publication

of the final plan, recommended to the Congress in its annual report for 1921 that amendatory legislation be enacted "to provide whether, and if so, how voluntary consolidations of carriers may be effected pending ultimate adoption by us of a more complete plan of consolidation." This recommendation was repeated in the annual report for 1922, but Congress did not act. Early in 1923 the Boston & Maine applied to the commission, under Section 5, for permission to effect a consolidation of that company and certain of its subsidiaries into a single system for ownership and operation. The commission promptly dismissed the application. Paragraph 6, said the commission, "confers upon us jurisdiction to approve the proposed consolidation of the properties of two or more carriers into one corporation for ownership, management and operation, but it provides that the proposed consolidation must be in harmony with, and in furtherance of, the complete plan of consolidation mentioned in Paragraph 5 of said section. While we have agreed upon the tentative plan of consolidation provided for by Paragraph 4 of that section, and given due publicity thereto, the hearing which we are required by said Paragraph 5 to hold thereon, has not yet been brought to a close, and the complete plan of consolidation has not yet been adopted by us. We are of the opinion, therefore, that the filing of the application was premature if it was intended thereby to invoke our jurisdiction under said Paragraph 6."

The commission, however, was apparently convinced that Congress would not enact any legislation which would enable the carriers to effectuate voluntary consolidations pending the publication of its final comprehensive plan under Paragraph 6. The commission was further convinced apparently that it, in the public interest, should take some step to permit the carriers to further voluntary consolidations. It threw out, in this case, a very significant suggestion that was accepted very shortly thereafter by the Nickel Plate. The commission declared, "We are not passing upon the question as to whether the issuance of securities should be permitted on the theory that the plan may be carried out under authority conferred by *state laws*." The New York, Chicago & St. Louis was at that time, and had been for some time previous thereto, engaged in the organization of a new company representing a consolidation of the properties of the old New York, Chicago & St. Louis Railroad Company, the Chicago & State Line Railroad Company, the Lake Erie & Western Railroad Company, the Ft. Wayne, Cincinnati & Louisville Railroad Company and the Toledo, St. Louis & Western. The consolidation of these properties into a new corporation for single ownership, management and operation, was carried out under the laws of those states in which the several constituent companies operated. The new railroad company was a consolidated corporation created and existing under the laws of the states of New York, Pennsylvania, Ohio, Indiana and Illinois, for the purpose of acquiring and operating the properties hitherto owned and operated by the constituent companies. Application was then made to the Interstate Commerce Commission for permission, under Section 20a, to exchange its capital stock for the capital stock of the constituent companies; and under Paragraph 18, Section 1, for a certificate of convenience and necessity to permit the new consolidated corporation to acquire and operate the lines of the several companies entering into the consolidation. It is clear that the consummation of this consolidation would involve the organization of a new company for single ownership, management and operation. Such a consolidation was of a type provided for under Section 6 and could not be consummated, according to that section, until the adoption of the commission's final plan. Application, however, was made under different sections of the Act. It was the same kind of an application that had been made two years before by the Pittsburgh & West Virginia. But the Pittsburgh & West Virginia had not previously organized

its two properties into one consolidated corporation under state laws. The commission fully understood the purpose of this application; but it apparently believed that this was the only method left open to bring about voluntary consolidations prior to the adoption of the final plan. The majority opinion approved the application of the Nickel Plate on the following grounds: "Applicable state laws afford means to effect the consolidation. Such laws are in force. They are, in fact, the laws to which resort must be had to effectuate consolidations which the Interstate Commerce Act is designed to facilitate. We cannot conclude that they have been nullified or superseded. As valid existing laws we have no power to suspend them. Whether state corporations in matters regarding their status as legal entities as distinguished from their participation in interstate commerce may avail themselves of such laws does not depend upon our election or anything we do. Authority in us to withhold approval in the public interest of security issues when state laws permit consolidation does not mean that we may not grant approval when public interest requires that we do so."

The commission, therefore, permitted a consolidation under state laws when it was patently impossible to permit it under federal laws. It is very doubtful whether Paragraph 18, of Section 1, was originally intended by Congress to apply to consolidations. Certainly in previous cases the commission had decided that this part of the law did not relate to the acquisition and operation of lines already in existence prior to the passage of the Act of 1920. It is very difficult to place any construction upon the action of the commission other than that it took the only possible practical step to avoid obstructing the voluntary consolidation plans proposed by the carriers. The commission appreciated that the interdiction of consolidations prior to the preparation of the final plan, would seriously impede the consummation of consolidations that were clearly in the public interest. The conviction of the commission in this case is indicated by the statement that "the tentative consolidation plan of the commission, and the showing made in this proceeding, support the conclusion that consolidation of the properties and corporation here involved, so serves the public interest that impediment would be misfortune."

#### Comprehensive Powers of the Commission

The consolidations of railroads effected either under Section 5, Paragraph 2, providing for incomplete consolidation, or under the scheme permitted by the commission in the Nickel Plate case resulting in complete consolidation, are supervised by the Interstate Commerce Commission, with the public interest as the paramount factor. Incomplete consolidations may be carried out, according to the Act, if they are "in the public interest." The commission is also given power "to approve and authorize such acquisition, under such rules and regulations and for such consideration, and on such terms and conditions, as shall be found by the commission to be just and reasonable in the premises." In the final plan, furthermore, the large railroad companies shall be so organized that "competition shall be preserved as fully as possible and whenever practicable the existing routes and channels of trade and commerce shall be maintained." The commission, therefore, in approving consolidations, is required to make a triple finding: first, that the consolidation is in the public interest; second, that the price paid is reasonable, and third, that existing channels of trade be maintained. A finding of public interest will usually be made by the commission if the applicant shows that certain advantages to the public by reason of improved service and more efficient operation, will be effected. In the case of the New York Central, where that carrier applied for permission to lease a number of properties, it demonstrated to the satisfaction of the commission that the consummation of the consolidation applied for would re-



sult in the following economies. "Wherever joint freight and passenger stations are maintained it will be possible to eliminate separate records and reports of agency transactions; the same will be true of the operation of joint tracks and yards; freer use of engine house and shop facilities will be possible, and superintendence and accounting with respect thereto will be simplified; such unification of operation will make further reductions in operating expenses which it is impracticable to estimate in detail, and will result in improved service."

A very interesting point was developed in the proposed acquisition of a small line by the New Orleans, Texas & Mexico. The evidence demonstrated that the chief reason for the proposed acquisition was to secure a larger amount of traffic at the expense of a competing carrier—in this case the Southern Pacific. The applicant did not show that any material improvement in facilities or services would be brought about by reason of this consolidation. The commission decided that in view of the absence of any positive showing of any improvement in the public service, the application should be denied.

Furthermore, the price paid by the controlling carrier must be reasonable. In the case of the application of the Pittsburgh & West Virginia to acquire control of the West Side Belt, the commission denied the application because the terms were unreasonable from the standpoint of the public interest. It was shown that the applicant proposed, originally, to issue capital stock to an amount exceeding the book value of the subsidiary property by \$3,997,556. The commission further indicated that the valuation of the property, as shown by figures furnished it by the Bureau of Valuation, would have made the discrepancy between the property value, and the capital liabilities, even greater. In another case, in reference to the application of the Northern Pacific for approval to acquire the Billings & Central Montana Railway, the applicant requested permission to purchase the property on a basis of a value determined by the application of the theory of cost of reproduction new. The commission decided that "it does not seem proper to authorize the purchase at any sum in excess of the actual cost of building the line, or to permit the applicant to write into its investment accounts any sum in excess of such cost." Where the applicant has inserted conditions without which the consolidation could not be accepted by the carrier, and where the commission decides that such conditions are not acceptable to it, the latter body has seen fit to reject the application in its entirety. The commission has insisted on fixing its own qualifications and conditions in approving any consolidation plan.

The maintenance of existing channels of trade and commerce is also of indispensable importance from the standpoint of the public interest. Where traffic connections have been built up and where shippers have accustomed themselves to the flow of traffic over a certain route, it would be unwise, in the interest of these shippers and the general public, to divert arbitrarily this flow of traffic into new channels merely because of a change in corporate control. In all applications for acquisition and the consolidation the commission makes a careful examination to prevent the diversion of traffic from its normal trade channels. The proposed acquisition of the International Great Northern by the St. Louis & San Francisco Company was rejected by the commission primarily on the ground that the natural channel of trade and commerce over the International Great Northern was with the Texas & Pacific and the Missouri Pacific, and that the acquisition of this road by the Frisco would have broken up this route that had existed for many years. Again, in the case of the acquisition of the Carolina, Clinchfield & Ohio, by the Louisville & Nashville-Atlantic Coast Line System—the commission also laid down a number of stipulations directed towards the maintenance of an

open gateway of traffic for all carriers using the Clinchfield route. In all cases the commission takes care not to disturb any existing channels of trade and commerce.

### Numerous Consolidations Already Accomplished

The consolidations that have been effected thus far are interesting from a number of different points of view. Some consolidations have been carried out strictly in accordance with the tentative plan of the commission and for reasons described in that plan. Thus the El Paso & Southwestern has been consolidated with the Southern Pacific; the International Great Northern has been acquired by the New Orleans, Texas & Mexico; the Texas & Pacific by the Missouri Pacific. In other cases, however, consolidations have been effected and proposed which are clearly in contradiction to the plans elaborately described in the commission's tentative plan. The Toledo & Ohio Central and its controlled companies, assigned to the Norfolk & Western, have been acquired by the New York Central; the Denver & Rio Grande, assigned to the Santa Fe, has been jointly acquired by the Western Pacific and the Missouri Pacific. The proposed consolidation involved in the new Nickel Plate organization creates an entirely new situation in trunk line territory different from that laid down in the tentative plan. The latter provided for eight systems in trunk line territory; the carriers have now worked out a scheme based on the existence of only four systems. The plans developed by the commission were upset to a large extent by the activity of the Van Sweringens of Cleveland—newcomers in the railroad field. They have succeeded in effecting a new combination with the New York, Chicago & St. Louis as a nucleus. That company, a holding company, proposed to lease and operate the present New York, Chicago & St. Louis (the operating company), the Erie, the Chesapeake & Ohio, the Hocking Valley and the Pere Marquette.

This consolidation, if approved by the commission, would be utterly at variance with the tentative scheme incorporated in the commission's original plan. From the standpoint of the public interest, however, this is not at all significant. The tentative plan was designed to afford a basis of discussion for the shippers, carriers, and other interested parties. It has served that purpose quite admirably. The mere fact that a proposed consolidation is or is not in agreement with the plans outlined by the commission in its report for 1921, is not of compelling importance. The price to be paid for the properties may be entirely unreasonable, even though everything else may be entirely satisfactory. While a combination described in the tentative plan may be in the public interest, a modified plan, presented by the carrier may be even more in the public interest. Professor Ripley indicated in the report accompanying the tentative plan, that one of the fundamental objections to the consolidation of the Erie with the Nickel Plate lies in the fact that these roads "have been bitter competitors for many years." And yet three years later these two properties agree to consolidate. Conditions change; and it is not unreasonable to expect that with such changing conditions many of the systems outlined by the commission may become quite inadequate.

### The Country-Wide Plan and Its Difficulties

It is decidedly questionable whether or not the final plan of the commission when published will be of any great service in facilitating consolidations under the Act. The railroad situation is a dynamic one. A final plan which may be practicable and adequate at one time may be entirely unsuitable to conditions existing a short time thereafter. It seems advisable to permit the carriers to work out their plans voluntarily under the supervision and control of the Interstate Commerce Commission. The commission has shown in its decisions thus far that it can protect the public from the dangers of any unwise consolidations that might

not serve the public interest. It seems that the existence of a definite plan of the commission might retard the voluntary activity of the carriers in facilitating consolidations which are clearly advisable.

Further than that, the value of those paragraphs of Section 5 providing for complete consolidations may be seriously questioned. No such consolidation can be carried out except with the consent of all stockholders of a company. If the stock is owned or controlled by a few individuals or institutions it is probable that negotiations can be successfully conducted. The price may be somewhat high; some advantage may be taken of the buyer because of his strategic position. An agreement, however, is likely to be reached on some reasonable basis. But, where the stock is widely held by thousands of persons, it is more difficult to purchase all of the stock. There will always be some shareholders who will refuse the terms offered by the interested carriers. The minority stockholders might demand terms that are entirely unreasonable, judged by any of the accepted financial standards; yet their demands cannot be ignored.

This problem may present itself in a variety of ways. The minority or individual stockholders may demand that their securities be exchanged for those of the new consolidated company on a basis more favorable than that accorded to the majority holders. In such an event the railroad management has no alternative, other than to revise the terms of the exchange to all the stockholders. For, assuredly, all stockholders must be treated alike. It is also probable that the minority holders might demand cash for their own stock. The price asked for might be unreasonably high; and yet, if the consolidation is to succeed, these stockholders must be bought out.

The law provides no remedy to solve this situation. In the original Nickel Plate consolidation it was necessary to purchase the holdings of the minority stockholders at a figure substantially higher than that received by the other parties. It is true that the minority was enabled to accomplish this by reason of an antiquated Ohio statute. But the possibility of obstruction of a consolidation by a few security holders is always present. The interstate Commerce Commission can consider the price proposed to be paid only to the extent necessary to conserve the public interest. "We may inquire," the commission said, in one case where this subject was up for discussion, "whether the consideration to be paid by the applicant is fair and reasonable, to the end that the assets of the applicant be not wasted or its credit impaired so as to jeopardize its ability to perform its public functions." Any price declared by the commission to be reasonable, does not in any way bind any shareholder; it simply indicates that the carrier proposing to buy the stock may pay that price for it. For reasons satisfactory to themselves the shareholders need not accept that price.

It is quite certain that but few consolidations on any extensive scale will be carried out in the near future with the law as it now stands. Parties controlling a few per cent of the outstanding stock of a carrier can block the execution of a consolidation which, from the standpoint of the public interest, might be greatly desirable.

There are numerous railroads, for example, whose asset value as tentatively determined by the commission under the valuation act of 1913 is substantially in excess of the outstanding securities. Their earning power, however, is low, due to light traffic density. The capitalized earning power of these properties is lower than the potential capitalizability of the assets devoted to the service of transportation. For consolidation purposes under Section 5, Paragraph 6, the stock of such a company may have great bargaining values. The law declares that the par value of the securities of the new company "shall not exceed the value of the consolidated properties as determined by the commission." The minority stockholders may find it profitable to hold out for a price

based on the asset value of the property. Their legal position may indeed be doubtful. The securities of a new company under the law cannot indeed exceed the property values; but this does not necessarily mean that they must always be equal to the value of the assets. Furthermore, the value of railway properties for consolidation purposes may be greatly different from that indicated by the value declared under the valuation act of 1913. The minority holders may thus discover that the legal basis for their expectation may be undermined.

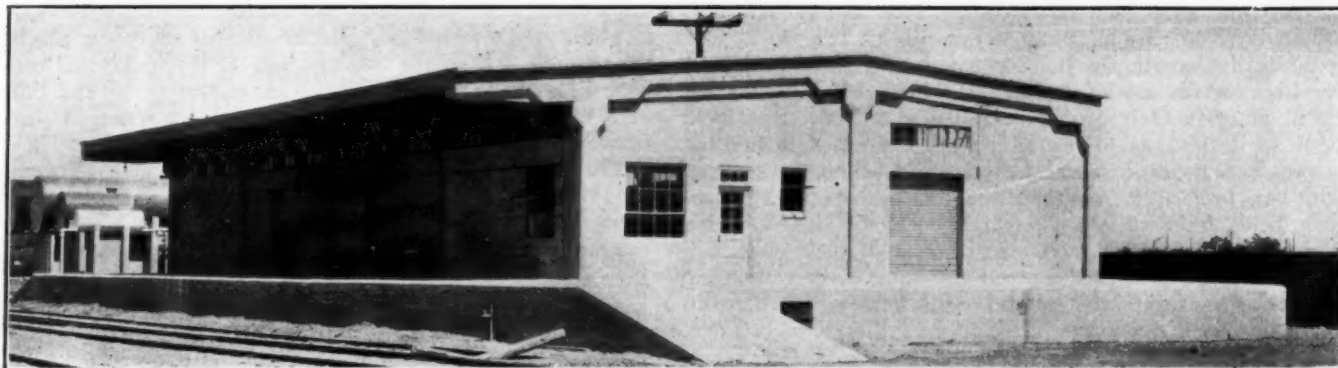
The fact must be noted, however, that many stockholders will insist upon prices for their holdings higher than would be warranted by the earning power of the respective carrier. The question then arises as to the wisdom of insisting upon the consummation of these complete consolidations. Obviously, the saving in expenses is a clear advantage. This must be balanced against the large loss that might result from the necessity of buying out the protesting stockholders. Also, it is more than probable that the commission might object to the payment of extraordinarily large sums to mollify any group of security holders. Again, the carriers proposing to acquire the properties and franchise of other carriers might refuse to meet the terms of the recalcitrants. The voluntary activity of the roads in initiating and consummating proposed consolidations in the public interest would thus be seriously impeded.

Under Paragraph 2, Section 5, consolidations may be brought about despite the objections of protesting stockholders. The majority stock of a road can be sold to another road; or the property leased by the action of the majority stockholders. The minority holders may vigorously object to such a transfer of control, as they have done in quite a few of the acquisition cases before the commission. The latter body has declined to interfere in any disputes between a company and its stockholders. The dissatisfied minority may, it is true, secure some concession from the courts. However that may be, it is quite certain that consolidations not possible under Paragraph 6, may easily be effected under Paragraph 2. Under these circumstances it appears to be the better wisdom to remove Paragraph 5 and 6 entirely and to allow consolidations to be worked out under Paragraph 2. The resultant failure to eliminate certain operating expenses is an admitted defect; which is outweighed by the advantages resulting from the more successful execution of consolidations clearly in the public interest.



A New Pacific Type for Service on the London & North Eastern's "Flying Scotsman" Receiving Finishing Touches at the Company's Doncaster Works





*The New Oil House at Sacramento*

## Pre-Cast Concrete Used in Engine Terminal

Western Pacific Builds Two Structures of This Type of Construction at Stockton, Cal.

**T**HE CONSTRUCTION of reinforced concrete buildings of pre-cast members erected or assembled by means of derricks has had limited application in the railway field, and of the few structures which have been built accord-

across the stalls. The outer wall consists almost entirely of glass in steel sash with a nine-inch brick wall below the window sills. The temporary end of the house is of wood to afford ready provision for the future extension. The floor comprises a seven-inch reinforced concrete slab with a brush finish. All piping in this house, with the exception of drain and sewer pipe, is carried over head.

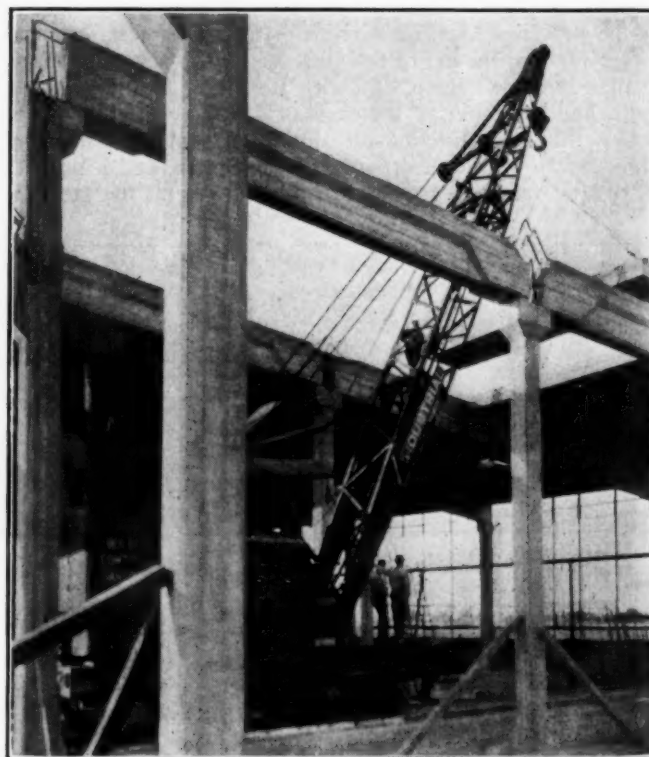
The shop building is 45 ft. by 215 ft. with framing some-



**Erecting One of the Roof Girders. Note the Reinforcing Bars Extending from the Ends of the Unit Members**

ing to this system the larger number are on the Pacific coast. A further application of this method, again in the far west, is illustrated in the roundhouse and shop building of the Western Pacific now nearing completion at the new terminal at Stockton, Cal.

The roundhouse contains 10 stalls 101 ft. long and has been so located that there is adequate space for the future addition of 28 more stalls. The structure comprises a frame of reinforced concrete columns surmounted by girders spanning lengthwise of the stalls, these girders in turn serving as the supports for reinforced concrete roof slabs that span

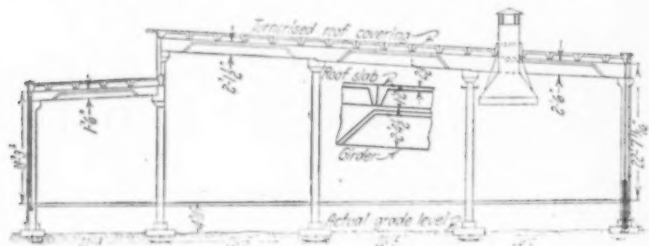


**The Roof Slabs, Which Resemble Inverted Troughs, Were Also Erected by the Crane**

what similar to the roundhouse but with considerable portions of the outside wall space made up in pre-cast wall slabs, the remaining areas comprising glass in steel sash. The interior of the building is divided into separate rooms for

the machine shop, storeroom, office, tool room, engineers' locker room, etc., by means of hollow tile partitions.

While the system for the construction of these buildings provides for the use of independently formed members set up in place in their proper positions, the connections have been so devised as to insure a high degree of monolithic action in resisting external forces. The columns were cast with bars projecting from their upper ends, the same arrangement being followed in the construction of the girders, which had the reinforcement bars extending from their ends into an open space provided between the ends of the adjoining girders at the top of the column. After the girders were in place this open space was boxed in and filled with concrete. This arrangement not only serves to give the girders a con-



Longitudinal Section of a Typical Stall

siderable degree of continuity over the column, but it introduces a considerable knee-bracing effect between the girders and the columns.

A somewhat similar arrangement is effected in the connection of the roof slabs to the girders. The roof slabs were dimensioned so that instead of butting tight at the joint over the girders they left an open space over the center line of the girders which was filled with concrete or grout after the slabs were all in place. But the joint is made even more effective by the provision that the stirrups of the girder reinforcement projected from the top of the girders into this grouting space, so that in some degree, at least, the filling of the grouting space had the effect of increasing the effective depth of the girder. This feature of the design was given exhaustive study before it was incorporated in the plans and a number of girders were tested to destruction, some with the grout in

smooth and dense surface. All reinforcing steel was locked in place in the forms and carefully inspected before placing the concrete. After the concrete had set the individual units were lifted from the forms by a locomotive crane and piled in a curing yard, where they remained for about 20 days before being placed in the building.

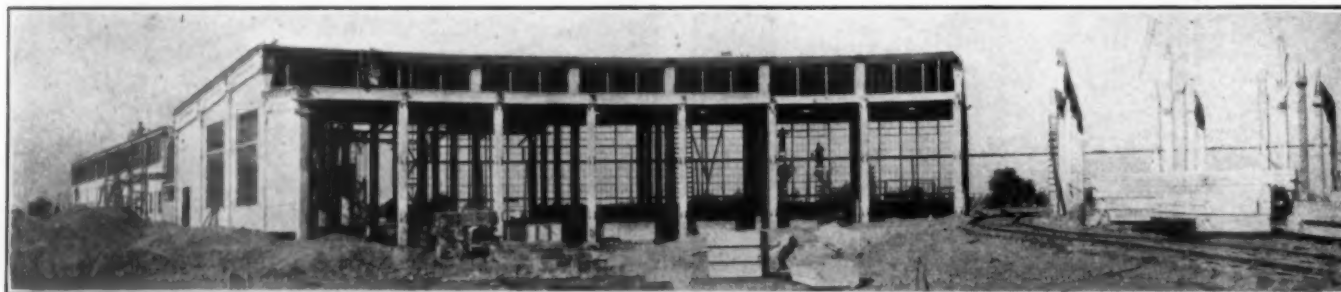
The erection was handled with a locomotive crane. Column footings were cast with a pocket to receive the lower



An Interior View of the New Machine Shop at Stockton, Which Clearly Indicates the Character of the Unit Construction

ends of the columns which were grouted solid after they had been put in place and plumbed. After the grout around the column bases had set the wall slabs, roof girders and roof slabs were placed in the proper order.

In addition to its use for the casting of the unit members



Adoption of the Pre-Cast System of Construction Greatly Simplified the Actual Work Done on the Site of the Buildings

place and others without the grouting. The latter failed in compression while those tested after grouting failed in tension under approximately twice the ultimate load in the other case.

The various unit members were cast in a yard that had been laid out to afford economical and quick handling of the concrete. The material bunkers and mixer were placed at one end of the yard while the mixed concrete was transported to the forms on an elevated track by means of a motor-driven hopper. The forms were of substantial construction, thoroughly bedded on timbers laid on the ground and properly aligned. The inside faces of the forms were covered with sheet metal which gave the finished concrete a sufficiently

for the roundhouse and shop building at Stockton, the concreting yard was also used for the manufacture of the members for a Western Pacific oil house erected at Sacramento. This building is 45 ft. wide by 100 ft. long with a 10-ft. covered platform on the track side and a 20-ft. by 55-ft. platform at each end, provided with ramps. This building was erected in six days after the members had been delivered by rail at Sacramento.

The method of unit construction adopted for these Western Pacific buildings follows the same system which has been used in other unit constructed buildings on the Pacific coast, and elsewhere, namely, the "Unit-Bilt" system patented by the Unit Construction Company of St. Louis, Mo., which



has been succeeded by J. E. Condelman, formerly chief engineer of that company, and W. A. Bechtel, engineering contractor, San Francisco. The Western Pacific structures were designed and erected by the Bechtel organization under the supervision of Colonel H. M. Smitten, bridge engineer of the Western Pacific, and E. L. Phillips, construction engineer in charge of terminal projects.

## President Coolidge Urges Expedition of Consolidations

WASHINGTON, D. C.

**P**RESIDENT COOLIDGE in his message to Congress on December 3 called attention to the improvement in railroad service and also elaborated his former statements regarding the necessity of further legislation to expedite railway consolidations, but he failed to repeat the recommendation made at the opening of the last session relating to a readjustment of freight rates. While he indicated a belief that the labor provisions of the transportation act might be improved, his language did not indicate approval of the Howell-Barkley bill. On the subject of railways the President said:

The railways during the past year have made still further progress in recuperation from the war, with large gains in efficiency and ability expeditiously to handle the traffic of the country. We have now passed through several periods of peak traffic without the car shortages which so frequently in the past have brought havoc to our agriculture and industries. The condition of many of our great freight terminals is still one of difficulty and results in imposing large costs on the public for inward-bound freight, and on the railways for outward-bound freight. Owing to the growth of our large cities and the great increase in the volume of traffic, particularly in perishables, the problem is not only difficult of solution, but in some cases not wholly solvable by railway action alone.

In my message last year I emphasized the necessity for further legislation with a view to expediting the consolidation of our railways into larger systems. The principle of government control of rates and profits, now thoroughly imbedded in our governmental attitude toward natural monopolies such as the railways, at once eliminates the need of competition by small units as a method of rate adjustment. Competition must be preserved as a stimulus to service, but this will exist and can be increased under enlarged systems. Consequently the consolidation of the railways into larger units for the purpose of securing the substantial values to the public which will come from larger operation has been the logical conclusion of Congress in its previous enactments, and is also supported by the best opinion in the country. Such consolidation will assure not only a greater element of competition as to service, but it will afford economy in operation, greater stability in railway earnings, and more economical financing. It opens large possibilities of better equalization of rates between different classes of traffic so as to relieve undue burdens upon agricultural products and raw materials generally, which are now not possible without ruin to small units owing to the lack of diversity of traffic. It would also tend to equalize earnings in such fashion as to reduce the importance of section 15A, at which criticism, often misapplied, has been directed. A smaller number of units would offer less difficulties in labor adjustments and would contribute much to the solution of terminal difficulties.

The consolidations need to be carried out with due regard to public interest and to the rights and established life of various communities in our country. It does not seem to me necessary that we endeavor to anticipate any final plan or adhere to any artificial and unchangeable project which shall stipulate a fixed number of systems, but rather we ought to approach the problem with such a latitude of action that it can be worked out step by step in accordance with a comprehensive consideration of public interest. Whether the number of ultimate systems shall be more or less seems to me can only be determined by time and actual experience in the development of such consolidations.

Those portions of the present law contemplating consolidations are not sufficiently effective in producing expeditious action and need amplification of the authority of the Interstate Commerce Commission, particularly in affording a period for voluntary proposals to the commission and in supplying government pressure to secure action after the expiration of such a period.

There are other proposals before Congress for amending the

transportation acts. One of these contemplates a revision of the method of valuation for rate-making purposes to be followed by a renewed valuation of the railways. The valuations instituted by the Interstate Commerce Commission 10 years ago have not yet been completed. They have cost the government an enormous sum, and they have imposed great expenditure upon the railways, most of which has in effect come out of the public in increased rates. This work should not be abandoned or supplanted until its results are known and can be considered.

Another matter before the Congress is legislation affecting the labor sections of the transportation act. Much criticism has been directed at the workings of this section and experience has shown that some useful amendment could be made to these provisions.

It would be helpful if a plan could be adopted which, while retaining the practice of systematic collective bargaining with conciliation and voluntary arbitration of labor differences, could also provide simplicity in relations and more direct local responsibility of employees and managers. But such legislation will not meet the requirements of the situation unless it recognizes the principle that the public has a right to the uninterrupted service of transportation, and therefore a right to be heard when there is danger that the nation may suffer great injury through the interruption of operations because of labor disputes. If these elements are not comprehended in proposed legislation, it would be better to gain further experience with the present organization for dealing with these questions before undertaking a change.

On the subject of waterways the President said:

Meantime our internal development should go on. Provision should be made for flood control of such rivers as the Mississippi and the Colorado, and for the opening up of our inland waterways to commerce. Consideration is due to the project of better navigation from the Great Lakes to the Gulf. Every effort is being made to promote an agreement with Canada to build the St. Lawrence waterway. There are pending before the Congress bills for further development of the Mississippi Basin, for the taking over of the Cape Cod Canal in accordance with a moral obligation which seems to have been incurred during the war, and for the improvement of harbors on both the Pacific and the Atlantic coasts. While this last should be divested of some of its projects and we must proceed slowly, these bills in general have my approval. Such works are productive of wealth and in the long run tend to a reduction of the tax burden.

The second session of the Sixty-eighth Congress was convened on December 1 under circumstances which gave every indication that little in the way of legislation will be handled during the session except the necessary appropriation bills. The make-up of this Congress is practically the same as it was during the last session, when the Republicans had an insufficient majority to control whenever the "Progressives" chose to combine with the Democrats, but the latter combination was too loose to be effective except as obstructionists. Some of the Democratic leaders have indicated that they do not intend to obstruct in any way the passage of the appropriation bills and there is no particular incentive for any faction to try to force an extra session.

Consideration of the Howell-Barkley bill has already been postponed until after the New Year by the action of both the House and the Senate in setting aside Monday, December 15, for eulogies on the life of Woodrow Wilson. This bill is on the calendar that comes up every other Monday. The first Monday was opening day and only a brief session was held and the plan now adopted for December 15 sets the bill aside until the first Monday in January. The Hoch-Smith rate revision resolution was in a position where it could be passed through the Senate very easily but it is understood that it has now been decided necessary to change the language slightly to omit the reference to the existing depression in agriculture, which will require that the resolution be again sent to conference. The Gooding long and short haul bill and the Pullman surcharge bill which passed the Senate, are now referred to the House committee on interstate and foreign commerce, which will undoubtedly hold hearings before taking any action on the bills.

The Senate on December 2 passed the deficiency bill which was held up by a filibuster on the last day of the last session, which carries a supplemental appropriation of \$350,000 for the Interstate Commerce Commission for val-

uation work and also the \$50,000 appropriation for the investigation of the Northern Pacific land grants.

A committee of the National Industrial Traffic League, headed by Paul M. Ripley, president of the league, and accompanied by Senator Cummins, called on President Coolidge at the White House on November 26 to urge the importance of adequate appropriations for the Interstate Commerce Commission, and particularly to enable the commission to expedite the work of bringing up to date its valuations of railroad property. It was pointed out that Congress has been continually adding to the duties of the commission and that the transportation act made the valuation results of fundamental importance, while the general government policy of economy and the action of the Budget Bureau has been considerably reducing the appropriations recommended for the commission below the commission's estimates. The committee also pointed out the importance of the commission's work to the shippers. A similar committee had conferred with the director of the budget and the President on the subject earlier in the year.

Alfred P. Thom, general counsel of the Association of Railway Executives and C. H. Markham, president of the Illinois Central, called on President Coolidge at the White House on November 26 and discussed with him the general railroad situation, leaving with him memoranda on the subject.

## 22 Years Life From Petroleum Treated Ties in Hungary

By C. M. Taylor

Superintendent, Port Reading Creosoting Plant, Central of New Jersey and Reading

**I**N A FORMER ARTICLE (*Railway Age*, March 3, 1923, page 505) describing the development of the preservative treatment of cross ties with petroleum creosote mixtures, I relied on American precedents and practices for the necessary evidence that the use of such a mixture was both prac-



A Section Through a Petroleum Treated Beech Tie from Hungary After 22 Years' Service

tical and safe. Since that time much interest has been shown by various railroads in the problem and some are using petroleum-creosote mixtures for the treatment, while others are making investigations with the idea of adopting it as standard practice.

At the time when the more general use of petroleum-creosote mixtures was proposed, the price of creosote ranged between 16 and 20 cents per gallon. Some people thought

that the main reason that mixtures were being proposed was to lower the price of creosote by lessening the demand. The facts are that even though the price of creosote oil continues to drop, the addition of petroleum to creosote for tie treatment will increase and the results will be much better than if creosote had been used alone in cross ties.

However good American practice and precedents have been, it is gratifying to learn of some independent European results along similar lines. In the same year (1902) that the Santa Fe installed some petroleum treated ties in test tracks in Texas, a Hungarian named Polifka was instrumental in having a large number of beech and white oak ties treated with a petroleum mixture far more radical in its formula than any yet practiced in this country, his mixture consisting of 90 per cent Roumanian petroleum and 10 per cent of beech wood tar creosote, with about 13 per cent acid content.

The records compiled by the State Railways show that the ties in the first section are standard European main line beech ties 2.7 metres (8 ft. 9 in.) long, treated in 1902 and laid in 1903. A total of 1,264 ties were laid in this section, which is stone ballasted, tie plated and in every respect a typical main line of the Hungarian railways, carrying a dense traffic. The renewal record is as follows:

Removed in 1922 .....	3 ties
Removed in 1923 .....	6 ties
Total renewals .....	9 ties
Per cent renewals .....	Less than 1 per cent

The second installation was made about three miles beyond the first. In this section were placed 3,512 beech ties, treated in 1902 with the same mixture and laid in 1903. This section is on gravel ballast with tie plates  $6\frac{3}{8}$  in. by  $8\frac{1}{2}$  in. A total of 43 ties have been removed from this track to date as follows:

Renewed in 1909 .....	1 tie
" " 1920 .....	38 ties
" " 1922 .....	2 ties
" " 1923 .....	2 ties
Total .....	43 ties or 1.25 per cent

The third section is located about a mile beyond the second where 1,300 white oak ties were laid on a rather sharp curve carrying the bulk of traffic into Szolnok, which is a large railroad center, seven different lines connecting there with a big freight classification yard including a hump. Of these 1,300 ties, the removals to 1924, were as follows:

Removed in 1920 .....	37 ties
" " 1921 .....	102 ties
" " 1922 .....	17 ties
" " 1923 .....	11 ties

Total ..... 167 or about 14 per cent.

This track had been rebuilt and more mechanical wear took place than ordinarily. Also in the rebuilding any tie which was not almost perfect was thrown out and used elsewhere, but no record was kept of such reused ties, so that while 14 per cent were removed from the main line curve, undoubtedly some of these were used elsewhere.

It should be remembered that the beech of Hungary has practically no heartwood, so that the penetration of the treatment was almost perfect. This is illustrated by the photograph of a section of a beech tie now in the possession of the U. S. Forest Products Laboratory at Madison, Wis., which had given 22 years service.

ARKANSAS now has a law requiring all automobiles to stop before passing over a railroad grade crossing. At crossings of the Missouri Pacific signs reading "ARKANSAS LAW, STOP" have been put up by the railroad company. It is said that automobile owners generally have endorsed this law, and that it is well observed.



# I. C. C. Annual Report to Congress

## Much Work Curtailed for Want of Adequate Appropriations

**N**O NEW RECOMMENDATIONS for legislation are contained in the annual report of the Interstate Commerce Commission for the year ended October 31, 1924, submitted to Congress this week. The commission adheres to the recommendations of its previous reports. In many parts of the report are references to curtailment of work because of inadequate appropriations or because the available funds and forces have been devoted to activities called for by recent legislation to the neglect of other work.

At the outset the commission calls attention to the reductions from its own estimates of its needs made by the Bureau of the Budget in its estimates and by Congress in its appropriation bills. Although if the \$350,000 supplemental appropriation now pending in the delayed deficiency bill is added to the regular appropriation of \$4,272,284 for the present fiscal year, the total will closely approximate the commission's own estimate of \$4,688,860, the budget bureau has recommended only \$4,913,500 for 1926 as compared with the commission's estimate of \$7,364,496.

The details of the commission's estimates for the fiscal year 1926 for the various branches of its activities follow:

	Our estimates	Budget estimates
Commissioners and secretary.....	\$139,500	\$139,500
General .....	2,318,660	2,100,000
Accounts .....	1,189,670	600,000
Safety .....	395,000 }	500,000
Signal and train control devices.....	292,040 }	
Locomotive inspection .....	500,000	450,000
Valuation .....	2,369,626	1,000,000
Printing and binding .....	160,000	124,000
Total .....	7,364,496	4,913,500

As stated in its last report the commission says, "our reference to these repeated reductions is not in the nature of an appeal, but we believe it is our duty to again inform you that under the appropriations which have been reduced we cannot carry on in the future the same kind and amount of work as has been performed in the past." Much of the work required to respond to resolutions of Congress or to requests from various committees of members of Congress, the report says, is done at considerable expense and without additional appropriations. As in the last two reports the commission says that the work of its Bureau of Locomotive Inspection has been restricted by insufficient appropriations and an inadequate number of inspectors, although 15 more have now been authorized, and expenditures were kept within the allotment only by curtailing the travel of the inspection force to the detriment of the service. Further reference to the need for more money is made in connection with the report on valuation and in the report of the Bureau of Accounts it is stated that during the past year general examinations for the purpose of policing the carriers' accounts have been entirely suspended because of the rapidly increasing number of examinations under Section 15a.

Attention is again called to the need for remedial legislation to correct some of the defects in Section 28 of the Merchant Marine Act relating to preferential export and import rates.

### Railroad Earnings

Under the head "Railroad Earnings" the commission says in part:

The net earnings from railway operations have recently been better than in 1921 and 1922, but not so good as in 1923, which, except for the year 1916, was the best year in the absolute amount of the net earnings. However, in the calendar year 1916 the

WASHINGTON, D. C.  
revenues were less than 60 per cent of those of 1923, indicating a decided reduction since 1916 in the ratio of net railway operating income to operating revenues, which was over 28 per cent in 1916 and under 16 per cent in 1923. This corresponds with the fact that the operating ratio was 65.73 per cent in 1916 and 77.83 per cent in 1923. For the first eight months of 1924 it was 78.13 per cent.

As the annual net railway operating income has been recently less than \$1,000,000,000, it is safe to say that the return of 5¼ per cent upon fair value is not being received by the carriers. We are unable to say precisely what the return is, as a fair value for the carriers in groups or as a whole is not being determined by us except in so far as necessary for the purpose of a general rate case. It is well to note in this connection that net railway operating income takes no account of non-operating income or of interest charges. When these and related items are taken into account, the result is called, in our official reports, net income. For roads of Classes I, II, and III, excluding switching and terminal companies, the net income in 1923 was \$642,242,713. This was 7.06 per cent of the capital stock. The corresponding figure in the peak year 1916 was 8.40 per cent. That the net income in relation to stock could be nearly as good in 1923 as in 1916 in spite of a greatly increased operating ratio is explained by the fact that the railway securities outstanding have not for the most part been inflated by the present high costs of construction, so that it takes a smaller per cent of revenues to pay the interest charges and yield a fairly good return on stock.

On the subject of efficiency and economy the report says:

### Studies in Efficiency and Economy

To go into the question of efficiency of railroad management in a thoroughly effective way would necessitate an organization of technical experts especially qualified to investigate its numerous phases and would also require a large additional appropriation. To inform ourselves so far as practicable of the progress of the carriers in improving their methods of management, therefore, we rely, to a large extent, upon data filed by the carriers on prescribed forms, and upon information gathered at formal hearings. We have published two special annual reports designed to facilitate comparisons of averages bearing on the efficiency of operation for the years 1923, 1922, 1921, and 1916.

This is followed by a table giving a comparison of certain operating ratios for the past five years. The record of the investigation instituted by the commission into the efficiency and economy of management of common carriers is now being studied with a view to issuing a report thereon.

### Automatic Train Control

Regarding the advancement of automatic train control work the report includes the following:

At the time our first order was issued there were three installations of automatic train-stop or train-control devices in service on locomotive divisions designated therein, as follows: Chicago, Rock Island & Pacific, Chicago & Eastern Illinois and Chesapeake & Ohio.

On the first two carriers named the installation has been completed on one full locomotive division as required by our order of June 13, 1922. The Chicago, Rock Island & Pacific installation has been tested and it is expected that the installation on the Chicago & Eastern Illinois will be tested this year. [A petition for a final inspection and approval of this installation has just been filed by the C. & E. I.] On the full locomotive division prescribed for the Chesapeake & Ohio the installation is about 75 per cent complete. Recently, for cause shown, two carriers, the Chicago, St. Paul, Minneapolis & Omaha and the Western Maryland, were exempted from the orders of June 13, 1922, and January 14, 1924.

In view of the short time remaining under the first order it is probable that only a few of the carriers now making permanent installations will have their installations completed as required thereunder.

Preliminary inspections have been made of the intermittent magnetic induction system installed upon the Southern Pacific between Tracey and Brentwood, Calif., on the Missouri Pacific between Leeds, Mo., and Stillwell, Kans.; on the St. Louis-San

Francisco between Nichols and Logan, Mo. An inspection similar to that known as a preliminary inspection has also been made of the continuous induction train-control system on a test section of the Pennsylvania between Lewistown and Sunbury, Pa.

During the year plans and specifications of 34 train-stop and train-control devices were submitted for examination and report. Of this number 24 were found to be impracticable or unworthy of further consideration in the form presented and 10 possessed sufficient merit to warrant consideration. Of the latter, 3 were of the continuous type, 2 of the intermittent induction, and 5 of the intermittent electrical contact or ramp type.

The record of accidents investigated by our forces for the year ended June 30, 1924, shows 100 collisions and derailments, in which 245 persons were killed and 1,501 injured. These accidents may be divided into four groups: (1) derailments; (2) collisions in automatic-signal territory; (3) collisions in non-automatic-signal territory, and (4) collisions in time-table and train-order territory and yards. The following table shows the number of accidents in each group, the number in each group which probably would have been prevented if an adequate system of automatic train control had been in use, and the number of persons killed and injured in such preventable accidents:

Group	Accidents	Preventable accidents	Number of persons killed in preventable accidents	Persons injured in preventable accidents
1.....	46	14	19	77
2.....	12	9	18	122
3.....	10	8	18	134
4.....	32	19	58	447
Total.....	100	50	113	780

The number of preventable accidents, the number of persons killed, and the number injured in such preventable accidents represent 50, 46 and 52 per cent, respectively, of the total number of accidents investigated, persons killed and persons injured.

The importance of continuous effort to prevent railway accidents with their great loss of life, injury to persons, and destruction of property can hardly be overstated.

### Consolidation

Under this head the report merely states that hearings have been completed, including 11,713 pages of testimony and 711 exhibits, and that "the work of preparing the complete plan is progressing."

### Valuation

Progress has been made, the report says, in the preparation of underlying engineering, land, and accounting reports, and of tentative valuations.

The diversion of part of our force to other tasks, coupled with heavy reduction in number to meet reduced appropriations, has prevented completion of underlying reports. The following table shows the status as of October 31, 1924, as to underlying reports on steam roads compared with that of the same date in 1923:

Section	Date	Number of reports	Number of corporations	Miles of road <sup>1</sup>	Per cent of total mileage <sup>2</sup>
Accounting .....	1923	903	1,474	223,444	90.09
Do .....	1924	1,034	1,707	243,605	99.70
Engineering .....	1923	912	1,516	223,796	90.24
Do .....	1924	953	1,610	235,088	96.20
Land .....	1923	1,051	1,522	219,426	88.47
Do .....	1924	1,106	1,672	233,247	95.40

<sup>1</sup> Miles of first track of main and branch lines; no duplication for second or other main track or sidings.

<sup>2</sup> The percentages for 1923 are on the basis of a total mileage of 248,000. The percentages for 1924 are on the basis of a corrected total of 244,377 miles.

The following table shows similar information with respect to tentative valuation reports served:

Date	Number of reports	Number of corporations	Miles of road <sup>1</sup>	Per cent of total mileage <sup>2</sup>
Oct. 31, 1923.....	327	468	54,622	22.03
Oct. 31, 1924.....	386	568	75,375	30.84

<sup>1</sup> Miles of first track of main and branch lines; no duplication for second or other main track or sidings.

<sup>2</sup> The percentages for 1923 are on the basis of a total mileage of 248,000. The percentages for 1924 are on the basis of a corrected total of 244,377 miles.

### Dangers in Delay

Based on our experience thus far we estimate that the hearings to be held on protests to tentative valuations will exceed 500 in number. We cannot estimate their length. It is apparent that satisfactory completion of the work, already over 10 years in progress, is seriously menaced by delay in completing these primary valuations. Most of them are already from 6 to 10 years old. In

administering the act present-day valuations are needed, but before they can be had primary valuations must have been completed to serve as bases for carrying the valuations forward. There is serious disadvantage in the lapse of so many years between the primary and the present-day valuations. With the passage of time come cumulative changes in the property by reason of additions, betterments, and retirements, thus rendering the original inventories increasingly unrepresentative of present conditions.

Heavy reductions in staff constitute the major cause for delay in bringing primary valuation to a close, but a contributory cause is found in the length of hearings under ordinary trial procedure. While this is in large part attributable to the nature of the proceedings, relating as they do to the values of extensive properties worth hundreds of millions and even billions of dollars, the adaptability of ordinary trial procedure to the expeditious determination of the multitudinous issues presented by protests against the tentative reports has become questionable. The individual pieces of property whose reproduction costs or present values are in issue are innumerable. The taking of testimony by examination and cross-examination of witnesses with every issue fought out on the record, point by point, is expensive in time, money, and staff. The testimony and complicated exhibits run into thousands of pages in single cases. Many of the issues present highly technical engineering, land, and accounting questions.

### Tests of Shortened Procedure

As a possible solution of this problem we have been giving thought to such shortening of procedure as will not be adverse to the public interest. In two test cases we have authorized a procedure which consists of conferences between our technical representatives and the technical representatives of the parties to the case with a view to clarification and simplification of the issues, elimination of immaterial matters and of controversy having its source in lack of understanding and the reaching of agreements or the preparation of statements of fact on technical issues. Under this plan the conferences are merely adjuncts to and not substitutes for such hearings as are provided by law. The plan under test provides that conferences can only be authorized at the hearing, where those in opposition may be heard; and that, if conference is authorized, the reports of conferees are to come to the record in such form as to be competent evidence and subject to attack both on hearing and in argument. Conferees cannot bind us. We propose in two test cases to consider the facts presented by the conference reports and to accept, reject, or modify the recommendations made by conferees in accordance with the dictates of our judgment. The authorization of such tests does not contemplate the surrender of any part of the duty of valuation clearly imposed upon us by the act.

The 43 cases in which hearings were concluded during the year covered 17,295 miles of road, or 7.1 per cent of the inventoried mileage. The policy of setting hearings of the larger carriers as soon as possible has been adopted, and hearings on protests of carriers, with an aggregate of 26,008 miles of first main track, or 10.6 per cent of the total mileage, have been instituted and are in varying stages of progress. The hearings on 20 additional protests of roads, embracing 11,962 miles of first main track, have now been assigned before examiners, and our forces are actively engaged in preparing for them.

Final value decisions already promulgated number 24, and cover 4,396 miles, or 1.8 per cent of the aggregate. In addition, 139 tentative valuation reports, covering 3,646 miles, or 1.5 per cent of the total mileage, have become final through lack of protest. Final reports thus cover only 3.3 per cent of the inventoried mileage, and they are reports, not of present-day valuations, but of primary valuations made as of dates of inventory ranging from 1914 to 1921.

### Recapture Valuations

In the administration of section 15a, added to the interstate commerce act by the transportation act of 1920, and providing for the recapture by us of one-half of the net railway operating income of every railroad system in excess of a return of 6 per cent on the value of its properties, we have availed ourselves of the data gathered under section 19a. The section 19a valuations, however, are almost entirely as of dates prior to the recapture periods, the first of which began with the last 10 months of 1920. We have also been utilizing the training and experience of our valuation forces in revising and correcting the primary valuations for application to the recapture periods.

In such revision and correction for recapture purposes the reports of carriers under our valuation order No. 3, giving additions, betterments, and retirements since primary dates of valuation, have been very helpful. The force engaged in policing and checking the carriers' records and returns under order No. 3 for use when the completion of primary valuations permits us to commence their revision for the purpose of bringing them to date, has been increased to 45 employees. This force is concentrating its attention upon carriers whose returns filed under section 15a indicate recapturable excess earnings, and is not only policing and checking



their order No. 3 records and returns but is compiling results for use in recapture cases.

### Certificates of Public Convenience and Necessity

Under the provisions of paragraphs (18) to (22) of section 1 of the act, 120 applications for certificates of public convenience and necessity were filed. Of these, 42, covering 2,564.66 miles of line, were for authority to construct new lines or to extend existing lines, 52 were for authority to abandon mileage aggregating 949.82 miles of line, and 26 were for authority to operate, or to acquire and operate, 2,052.56 miles of line.

The commission issued 82 certificates, of which some were in respect of applications filed during the preceding year, 26 covering 1,318.35 miles of new construction, 30 authorizing abandonment of 453.838 miles of line, and 26 authorizing the operation, or acquisition and operation, of 2,019.349 miles of line. It denied 11 applications—7 covering 2,298.60 miles of new construction, 3 seeking authority to abandon 69.13 miles of line, and 1 to operate 8.38 miles. Eleven applications—4 covering the construction of 271.54 miles of line, 4 for authority to abandon 49.68 miles of line, and 3 to acquire and operate 96.14 miles of line—were withdrawn. Four applications, 3 of which sought authority to construct 143 miles of line and 1 to operate 60.57 miles, were dismissed.

The commission has continued the practice of enlisting the co-operation of the state commissions in these cases. In 45 cases hearings have been held for it by state commissions during the year, and in most of such cases in which a decision has been reached it has followed their recommendations.

### Acquisition of Control

Paragraph (2) of section 5 of the act authorizes the commission to approve by order the acquisition by one carrier of control of one or more carriers either by lease, or by purchase of stock, or in any other manner not involving the consolidation of such carriers into a single system. Under this paragraph 34 applications have been filed, 33 authorizations have been issued, 1 application has been withdrawn, and 1 application denied.

### Recovery of Excess Net Railway Operating Income

Reports have been filed showing aggregate results with respect to excess net railway operating income of carriers subject to section 15a, as follows:

Period	Number of reports filed	Number of reports in which excess income is reported	Amount of excess income reported
Applicable period of 1920.....	968	30	\$2,079,748.65
Calendar year 1921.....	949	25	430,655.70
Calendar year 1922.....	892	46	1,702,063.90
Calendar year 1923.....	745	36	6,633,433.23
Total excess .....			\$10,845,901.48

A number of the reports included in the above statement cover systems or groups of carriers claimed by respondents to be under common control and management and operated as a single system within the provisions of paragraph (6) of section 15a. Accordingly, the number of operating carriers included in these reports was 1,144 for the applicable period of 1920, 1,167 for the year 1921, 1,122 for the year 1922, and 983 for the year 1923.

The excess income reported by carriers is not computed upon values fixed by the commission, and it may be that the number finally determined to have earned excess income will differ from the number reported.

Of the carriers reporting excess income, 53 paid during the year the aggregate sum of \$4,858,522.17, which, added to \$96,675.10 paid prior to November 1, 1923, makes the total payments \$4,955,197.27. The majority of payments have been made under formal protests and reservations, and, therefore, the contingent fund, composed primarily of such

payments, has not been made available for the uses contemplated by the statute.

In addition to the payments made by carriers of excess income and interest on delinquent payments pursuant the general railroad contingent fund has been augmented by interest received from investments. The present status of the fund follows:

Payments by carriers of excess income.....	\$4,955,197.27
Payments by carriers of interest on delinquent payments.....	18,484.28
Interest from bank deposits .....	2,062.30
Interest from investments in obligations of the United States .....	65,485.11
Total credits to general railroad contingent fund.....	5,041,228.96

In May last the commission began the institution of formal hearings in recapture cases. These have proceeded as rapidly as limited forces would permit. Some hearings are in progress and others will be assigned as rapidly as possible.

### Issuance of Securities and Assumption of Obligations

The commission has received 257 applications, 14 amendments thereof and 26 supplements thereto, and 7 petitions for rehearing, under section 20a of the act, and has authorized the issue of securities and the assumption of obligations and liabilities in respect of securities of others in the following aggregate amounts.

Preferred stock .....	\$31,875,600.00
Common stock.....	159,670,520.00
Special guaranteed betterment stock:	
For payment of advances.....	9,928,850.00
Total stock.....	201,474,970.00
	50,500
Bonds, mortgage.....	\$1,262,417,999.66
Debentures.....	438,000.00
Notes secured .....	59,105,874.75
Notes, unsecured .....	10,871,965.53
Total notes .....	69,977,840.28
Equipment obligations .....	\$253,658,593.76
Receivers' certificates .....	7,060,000.00
Grand total securities.....	1,795,027,403.70
	50,500

<sup>1</sup>Shares of stock without nominal or par value.

Under paragraph (9) of section 20a certificates of notification of the issue of notes, maturing within two years, in the aggregate sum of \$137,438,523.95 were filed.

### Reimbursements of Deficits During Federal Control

In the last report it was stated that 352 carriers had filed claims for reimbursement under section 204 of the transportation act, 1920, claiming an aggregate amount of approximately \$25,200,000. During the past year 13 additional claims have been filed, increasing the amount approximately \$575,000. Final settlements with 223 carriers have been effected, in the gross amount of \$9,392,663.70, and \$17,546.73 has been certified as partial payments to carriers with which settlement has not been effected, making a total of \$9,410,210.43 certified. Of the latter amount, \$2,279,235.78 was withheld as traffic balances and other indebtedness due to the director general of railroads, as agent. In certifying the above amounts in settlement, substantial adjustments have been made, resulting in deductions from the amounts claimed by carriers. The aggregate amount of the deductions, is approximately \$10,000,000.

In addition to the final settlements effected, 84 claims have been dismissed and 5 withdrawn, leaving 53 awaiting final disposition.

The status of short line carriers for that portion of the period of federal control prior to relinquishment by the director general, is now in litigation.

### Six Months' Guaranty After

#### Termination of Federal Control

As stated in previous reports, 667 carriers filed acceptances of the guaranty provisions of section 209 of the trans-

portation act, 1920. The accounting adjustments required by subdivision (f) of said section 209 have presented difficulties which have tended to delay final settlements. This is especially true with respect to a majority of the cases settled during the past year and will be true of those remaining unsettled.

Attention is called to the fact that in the final disposition of 573 cases, in which an aggregate amount of \$346,841.163.33 was certified as being necessary to make good the guaranty, and in which cases an aggregate amount of \$433,072,532.87 was claimed, the commission has made adjustments resulting in a net deduction of \$86,231,369.54 from the amount claimed. These adjustments were due to accounting corrections relating to the test and guaranty periods; adjustments under section 4 of the federal control act with respect to interest on additions and betterments; maintenance ascertained as not allowable under paragraph (3) of subdivision (f), section 209; disproportionate items disallowed pursuant to paragraph (5) of that subdivision and deductions on account of unaudited items as provided in section 212; and the disallowance of special claims not recognized by the orders relating to settlement under the guaranty.

The carriers accepting the provisions of section 209 filed claims aggregating approximately \$657,000,000. The commission adheres to its previous estimate of approximately \$536,000,000 as the total amount payable under the guaranty. Final settlements have been effected with 450 carriers and 123 cases have been dismissed as not entitled to benefits of the guaranty, leaving 94 cases of which final disposition has not been made. Certificates have been issued in the following aggregate amounts:

Period	Advances under section 209 (h) and (i)	Partial payments under section 209 (g) and (i) as amended by section 212	Final settlement under section 209 (g)	Total
Amount certified for payment as of Oct. 31, 1923...	\$263,935,874	\$169,441,912.14	\$67,944,888.58	\$501,322,674.72
Amount certified during year ended Oct. 31, 1924	None.	None.	6,171,536.70	6,171,536.70
Grand total...	263,935,874	169,441,912.14	74,116,425.28	507,494,211.42

The estimated balance payable to carriers under section 209 is therefore, \$28,505,788.58.

### Loans to Carriers

Since the last report, the commission has certified to the Secretary of the Treasury approval of one additional loan made upon an application filed within the statutory period; namely, to the Boston & Maine Railroad for \$7,000,000. One maturing loan has been extended.

The total amount of repayments of principal during the year is \$15,421,435.89. As the cost of money has declined, resulting in better terms for financing from other sources, some carriers have repaid their loans in advance of the maturities.

### Bureau of Accounts

The work of examining the accounts of carriers for the purpose of determining amounts payable under sections 204 and 209 of the transportation act, 1920, is nearing completion. Staff released from this work is being employed in making examinations for recapture of excess earnings recoverable under section 15a of the interstate commerce act. During the year 12 examinations were made under section 204, 74 under section 209, and 271 to determine recapturable income.

At the close of the year the bureau was carrying on its docket 525 recapture examinations which it had been unable to reach. From present indications, accounting examinations under section 15a will be called for at the rate of not less than 784 each year. "To enforce effectively the provisions of the statute each of these should be made with reasonable

promptness after the close of the period subject to examination." The commission says, "If we are obliged to allow these examinations to lapse, proper enforcement of the statute will be impossible. With the staff of the bureau limited to an insufficient number, and with a reduced appropriation for the present year, we can see no hope of resuming the duties referred to, nor can we expect to complete the examinations under section 15a that should be made each year."

### Statistics

In connection with the report of the Bureau of Statistics the report says:

New railroad construction is not keeping pace with abandonments, although existing roads are constantly being improved by additional main tracks and yard tracks and sidings. The substitution of larger cars and locomotives for retired equipment continues. From 1908 to 1923 the average tractive power of a locomotive increased from 26,356 pounds to 38,835 pounds and the average capacity of a freight car from 34.9 tons to 43.7 tons. The calendar year 1923 marks the peak of railroad freight tonnage and ton-mileage. The number of passengers carried in 1923 although larger than in the year preceding, was smaller than in 1913, 1914, 1916, and in each subsequent year, including 1921, but this relationship does not hold true of the passenger-miles because of the increase in the length of the average journey. The growth in the length of haul per ton of freight reached its maximum in the year 1919, having been 309 miles in that year as compared with 300 miles in 1923 and 254 miles in 1908 (fiscal year). The investment per mile of road continues to grow annually, but the rate of return from operations on the reported book value, which now exceeds 21 billions of dollars shows wide fluctuations. That for 1923, 4.56 per cent, was the most favorable since 1917. Likewise, the net income after paying fixed charges, both in absolute amount and in ratio to capital stock, 7.06 per cent, was the largest since 1917. For the year 1923, 62 per cent of the capital stock paid dividends, the average rate on such stock being 7.29 per cent. But if the amount of dividends is spread over all the outstanding stock, the average percentage falls to 4.52. In 1923, as in 1920, operating revenues passed the 6-billion-dollar mark. While operating revenues were greater in 1923 than in 1920, operating expenses were nearly a billion dollars less than those of 1920. Maintenance of equipment expenses continue to absorb a much larger proportion of operating revenues than they did 15 years ago. The average number of persons employed in 1923 by Class I steam roads was 1,855,260, representing a substantial reduction from the peak in 1920, 2,022,832, but an increase over the figures for 1921 and 1922. The compensation to employees was \$3,004,083,599. This sum bears about the same relation to total operating expenses as obtained ten years before, but in relation to operating revenues the pay roll is a somewhat larger percentage than for the year 1913, although a decided reduction from the peak figure of 1920. The average receipts per ton-mile in 1923 were 1.132 cents as compared with 0.729 cents in 1913, an increase of 55.3 per cent. In the same period, the passenger-mile receipts increased from 2.008 cents to 3.026 cents, an increase of 50.7 per cent.

### Formal Docket

The formal complaints filed numbered 1,343, of which 1,076 were original complaints and 267 subnumbers, an increase of 183 as compared with the previous period. The commission decided 1,063 and 253 have been dismissed by stipulation or on complainants' request, making a total of 1,316 disposed of, as compared with 1,188 during the previous period.

The commission conducted 1,479 hearings and took approximately 226,234 pages of testimony, as compared with 1,883 hearings and 248,383 pages of testimony during the preceding period.

### Bureau of Informal Cases

The number of informal complaints received was 6,876, an increase of 471. The director general of railroads, as agent, and the carriers filed 7,098 special docket applications for authority to refund amounts collected under the published rates, admitted by them to have been unreasonable, an increase of 1,555. Orders authorizing refunds were entered in 5,823 cases, an increase of 1,840, and reparation thereon was awarded in amounts aggregating \$1,557,848.82. In addition 431 cases were dismissed or disposed of with-



out orders. The bureau also handled approximately 75,000 letters. Many of these had the characteristics of informal complaints, although not so classified. Others sought general information and informal rulings upon the rights and obligations of the public and common carriers under existing statutes.

#### Bureau of Traffic

Under this head the report says in part:

No general freight-rate reductions throughout the country as a whole or any of the major rate groups defined by us have been made during the year, although the process of readjustment and reduction of individual rates and rate situations has continued. We thought it inadvisable to undertake any general investigation of all rates, but we have not been unmindful of the necessity for further revision of the rate structure to eliminate maladjustments between communities and commodities. In reaching this determination it was our opinion that to undertake a general investigation of all rates would not only unsettle business and commercial conditions but would also necessitate an expenditure of time and money impracticable under the appropriations at our disposal. It was our judgment that progress toward standardization of rates could better be brought about through individual cases and investigations dealing with particular rate territories or adjustments, following in each, in so far as practical considerations will permit, a general plan leading to a common end.

In working out rate readjustments, especially in cases covering numerous commodities or considerable territory, certain general standards are kept in mind by us. Heretofore many complaints of discrimination and prejudice have arisen through lack of standard class and commodity rate scales, particularly the former, and through extensive use by the carriers of commodity rates designed to meet the needs of their respective lines and the shippers located thereon, with little regard to the general adjustment in contiguous territories or the effect upon other roads or shippers. As has been indicated in previous reports, class rates are governed by three major classifications, largely territorial, and although under each there are maintained class rates which move many thousands of different articles, the number of classes and the relationship of one class to another have been far from uniform, not only in one classification as compared with another but within each of the classifications. In so far as the practical needs of commerce will permit, we are now endeavoring to bring about standard percentages of the lower classes to first class, first in each of the classifications separately and later in all three. Experience has indicated that until rates are made more uniform it is impracticable to obtain a uniform classification, and it is hoped that the process of standardizing class-rate percentages will aid in the accomplishment of that purpose.

Where it is thought desirable to use distance rates as distinguished from specific rates, efforts are being made to bring about a standard relationship of the rates for various distances compared with one another, giving due regard to varying transportation conditions. In many instances commodity rates can be eliminated by standardization of class rate schedules, and discriminations, complications, and difficulties may be lessened by relating the commodity schedules more nearly to standardized class scales. However, nothing here said should be construed as expressing the view that all rates should be upon a distance basis, or that even where rates are made on a distance basis they should all bear the same relationship one to another for the respective distances. The needs of commerce and other practical considerations often stand in the way of uniformity. Rates manifestly should be made to encourage and build up the commerce of the country, and its free flow should not be impeded by theoretical obstructions. In prescribing rates, practical considerations are always taken into account by us, but we are convinced that far greater uniformity than now exists can be attained without undue sacrifice of practical considerations.

Experience has indicated that extended and careful investigation is necessary before important rate changes are made, and it appears that a gradual process of readjustment is much better fitted to the needs of commerce than are radical changes involving disturbance of business conditions. Hence, immediate completion of the process of standardizing even the class rates is not anticipated.

Continued success has attended our efforts to adjust rate controversies, including those involved in suspended schedules, by conferences or correspondence with carriers and shippers, and gradual progress is also being made in securing simplification of tariffs in the interest both of shippers and carriers.

#### Bureau of Service

The policy under which the commission has sought to bring about the greatest possible measure of co-operation between shippers and carriers has been continued.

Referring to the organization of regional advisory boards

by the Car Service Division of the American Railway Association, the report says:

"Much good has been accomplished and better transportation service secured through these co-operative efforts. Our service agents work in close co-operation with these boards, and attend the meetings whenever practicable to do so."

The perishable freight movement continues to increase in volume. The movement for the year ended October 31, 1924, is estimated as 926,000 cars, compared with 890,060 cars for the same period in 1923, 817,439 in 1922, and 735,700 in 1921. This immense volume has been cared for by the carriers in a most successful manner, the report says; reports of inability to supply refrigerator cars on orders being negligible. Cars, suitable for such shipments were stored in or moved into the originating territories in advance of the requirements of shippers. The carriers by prompt movement of both loaded and empty cars, with the co-operation of the trade in unloading and releasing them promptly, have been able to move this traffic with great satisfaction to shippers. There are still many receivers who are prone to use refrigerator cars as storage warehouses, thus delaying the return of those cars to originating territory. Anticipating the heavy demands for refrigerator car equipment over the entire country during August, September, and October, the commission issued a notice July 16 calling attention to the necessity for prompt unloading and release of cars by consignees and prompt handling by carriers. It pointed out the importance, in the interest of adequate service to all, of observing certain specified general principles, which, if followed by shippers and receivers of freight and carriers, would greatly facilitate service by refrigerator cars.

The rail movement of grain and grain products so far this year has been handled promptly and without serious inconveniences. The second largest wheat crop ever produced in the state of Kansas and the large crops of the surrounding states in that territory have been moved without complaint as to car supply or movement. The Northwestern states have a large crop, and the initial movement has been of grater volume than ever before in history, yet with no difficulty from a car service standpoint. At the start of the movement in the northwest territory the granger roads had on line box cars exceeding in number 100 per cent of their ownership.

No serious accumulation of cars under load on the rails of the carriers occurred during the year ended October 31, 1924. The total number of cars held for those reasons which are usually considered as causing accumulations ranged this year from 6,243 on June 13, 1924, to 18,756 on November 9, 1923. This former figure is considered as below normal.

A normal situation with regard to the movement of express business has continued throughout the past year. Very few complaints were filed. Several of these alleged discriminations in the distribution of express refrigerators as between Tennessee and Louisiana, while another dealt with the distribution of such cars in Texas. The others dealt with the handling of express matter while in transit and the stopping of certain trains at specified points for the handling of express traffic.

#### Bureau of Safety

A more detailed report of the work of the Bureau of Safety is published as a separate document. Except as otherwise specified the report here made is for the year ended June 30, 1924.

During the year ended June 30, 1924, 271 cases of violation of safety-appliance laws, comprising 866 counts, were transmitted to United States attorneys for prosecution; cases comprising 1,141 counts were confessed and 293 were dismissed, 90 counts were tried, resulting in judgment for the government on 76 counts and adversely to the government on 13. One count awaits decision. Two cases comprising

4 counts were appealed by the carrier and affirmed by circuit courts of appeals. In one case containing 18 counts, pending on appeal last year, 16 counts were decided in favor of the defendant and two in favor of the government. Two other cases containing 2 counts pending on appeal last year were decided in favor of the government. In a case containing two counts, pending before the Supreme Court on certificate from the circuit court of appeals for the third circuit, both counts were decided in favor of the government. On July 1, 1924, there were pending in the various district courts 361 cases, involving 1,094 counts.

Approximately 1,170,000 cars and locomotives were inspected. The number per 1,000 inspected which were found with defective safety appliances was 52.73. The corresponding record for the preceding year, during which the shopmen's strike occurred, was 100.31 and for the year ended June 30, 1922, it was 50.54.

The bureau investigated 100 train accidents, of which 52 were collisions and 48 derailments. The collisions resulted in the death of 119 and the injury of 928 persons; the derailments resulted in the death of 127 and the injury of 572 persons, a total of 246 killed and 1,500 injured. In several instances supplemental investigations have been made at suitable intervals after the occurrence of accidents to ascertain whether measures have been taken by the carriers to correct dangerous conditions or practices pointed out in the original accident investigation reports.

In co-operation with railroads and steel mills, studies have been made and are now in progress to determine what peculiar condition, if any, exists at the nucleus of a transverse fissure to which its formation is attributable. A report on other types of rail failures is also being compiled.

During the calendar year 1923 there were 5,218 accidents at highway grade crossings which resulted in the death of 2,268 persons and the injury of 6,314. Automobiles figured in 4,007 of these accidents, 1,759 persons being killed and 5,416 injured. There were 18 derailments of trains as a result of collisions between trains and automobiles, causing the death of 19 persons and the injury of 77. In addition, there were 6 derailments of trains as a result of collisions between trains and automobiles, but without death or personal injury.

The bureau has participated with the National Association of Railroad and Utilities Commissioners in the effort to devise ways and means for decreasing accidents at railroad grade crossings and is in touch with what is being done by state commissions and others actively engaged in accident prevention work.

#### Bureau of Locomotive Inspection

The work of this bureau is shown in detail in the report of the chief inspector, published separately. Except as otherwise stated, the report here made is for the fiscal year ended June 30, 1924.

The following tables covering the fiscal years indicated are self-explanatory.

Number of locomotives for which reports are filed, number inspected, number found defective, percentage inspected found defective, number ordered out of service, and total number of defects found

	1924	1923	1922	1921	1920
Number of locomotives for which reports are filed...	70,683	70,242	70,070	70,475	69,910
Number inspected .....	67,507	63,657	64,354	60,812	49,471
Number found defective...	36,998	41,150	30,978	30,207	25,529
Percentage inspected found defective .....	53	65	48	50	52
Number ordered out of service .....	5,764	7,075	3,089	3,914	3,774
Total number of defects found .....	146,121	173,846	101,734	104,848	95,066

Number of accidents, number killed, and number injured as the result of failure of some part or appurtenance of the locomotive and tender, including the boiler

	1924	1923	1922	1921	1920
Number of accidents .....	1,005	1,348	622	735	843
Per cent increase or decrease from previous year .....	25.5	117	15.4	12.8	49.2
Number of persons killed .....	66	72	33	64	66

Per cent increase or decrease from previous year .....	8.3	118	48.4	3	15.8
Number of persons injured .....	1,157	1,560	709	800	916
Per cent increase or decrease from previous year .....	25	120	11.3	12.6	41.6

<sup>1</sup> Increase.

The above tables show the effect of operating defective locomotives. In 1922, when 48 per cent of the locomotives inspected were defective, there were 622 accidents caused by failure of some part or appurtenance of the locomotive or tender, resulting in the death of 33 persons and injury to 709. In 1923 the percentage of defective locomotives increased to 65, the number of accidents to 1,348, the number killed to 72, and the number injured to 1,560 persons. In 1924 the percentage of defective locomotives was reduced to 53, the number of accidents to 1,005, the number killed to 66, and the number injured to 1,157. The conditions are still far from satisfactory and clearly show the need for more careful inspection and more thorough repair of locomotives, the report says.

The percentage of locomotives found defective decreased from 65 per cent during the year 1923 to 53.4 per cent during the last year, but it is still higher than during the year 1922, when 48 per cent of the locomotives inspected by our inspectors were found defective.

There were 43 boiler explosions which resulted in the death of 45 and the serious injury of 59 persons, a decrease in the number of explosions of 24.6 per cent as compared with the preceding year, but an increase of 30 per cent over the year 1922.

Most of these explosions were caused by overheating of the crown-sheet, because of low water in the boiler, although contributory defects or causes were found in 52.4 per cent of the cases. The necessity for better construction, inspection, and repair of all parts and appurtenances is apparent.

Information of violations of the locomotive inspection act was lodged with the proper United States attorneys in 9 cases covering 95 counts. Four of these cases, with 36 counts, were tried and fines aggregating \$3,600 were imposed. Of the 27 cases embracing 299 counts reported in our last report as pending, 19 cases of 215 counts were tried and fines aggregating \$16,100 were imposed. There are now pending in the various district courts 13 cases covering 143 counts.

## Labor Board Awards Wage Increase to Western Enginemen

THE UNITED STATES RAILROAD LABOR BOARD on November 29 awarded wage increases of approximately 5 per cent to the enginemen on the western railways. The new wage rates which will be in effect are the same in all classes as those granted by the New York Central early this year, which were stated in detail in the *Railway Age* of January 26, page 294. A number of rules which are more favorable to the railways than those which have been in effect were also ordered incorporated in the agreements by the Labor Board.

The board rendered its decision in spite of the fact that representatives of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen representing the employees had refused to testify at the hearing. The testimony of representatives of the 43 railroads involved, together with data secured by the board from other sources was considered sufficient grounds for the handing down of the decision. The Labor Board's efforts to compel the testimony of the union representatives are soon to be considered by the United States Supreme Court, as a result of the appeal of the brotherhoods against the decision of the United States District Court at Chicago, which held that the



Labor Board was empowered under the law to compel such testimony. The present decision of the board will not affect the status of that litigation.

The board's decision embodies virtually all of the proposals of the conference committee of managers which represented the railways in the negotiations held last spring. At these negotiations a tentative offer of a wage increase of 5 per cent, such as had been given the trainmen, was made if the brotherhoods would consent to the changing of a number of onerous rules which had been in effect. This the brotherhoods would not do, and the railway representatives immediately appealed the case to the Labor Board.

The following rules were ordered incorporated in the existing agreements by the Labor Board. In passenger service the 20 miles per hour speed basis rule shall be substituted for rules and agreements between the organizations and carriers which provide that overtime will be paid on a higher speed basis, on schedule of train when one hour late, etc., provided that roads paying actual miles will adopt the standard basic mileage day rule; the eight within 10-hour rule shall be substituted for rules and agreements which provide for computation of overtime on any other basis for passenger service falling within the purview of the rule; overtime in passenger service shall be paid at rate obtained by dividing by eight the mileage and daily rates established by the application of the increases herein specified to 100 miles. The existing higher overtime rates shall be preserved.

In freight service, engineers, firemen and helpers in pool or irregular freight service may be called to make short trips or turnarounds with the understanding that one or more turnaround trips may be started out of the same terminal and paid actual miles with a minimum of 100 miles for a day, provided that the mileage of all the trips does not exceed 100 miles and that the men shall not be required to begin work on a succeeding trip out of the initial terminal after having been on duty eight consecutive hours, except as a new day, subject to the first-in, first-out rule or practice; when an engineer, fireman or helper is required to make an emergency side or lap-back trip between his terminals, miles made will be added to the mileage of the regular trip and paid for on a continuous basis; enginemen required to make short trips from a terminal to an outlying point and return, from an outlying point to a terminal and return, or from an intermediate point to another intermediate point and return on account of engine failure, running for fuel or water, running for wreck car or car men or on account of a derailment, when such conditions arise in connection with their own trains, will be paid continuous time or mileage; rules or provisions of existing agreements restricting helper or pusher service which result in the payment of runarounds to assigned crews, payment for an additional day if required to leave a terminal after eight hours, or which conflict with the principal assignment of a single time, in miles or hours, for all service performed from the time required to report for duty until the engine is placed on a designated track or the crew is released, shall be eliminated; rules in existing agreements between the carriers and the organizations parties hereto restricting the tonnage handled in trains shall be eliminated.

Disputes over the following rules were remanded to the railways and the employees for further consideration in the event of their acceptance of the increased wage rates and rules mentioned above: In passenger service, the alleged inequitable conditions such as excessive overtime earnings or limitations as to the number of trips which may be made in one day's assignment under present eight within 10-hour rules; and duplication in the payment of overtime of arbitraries or special allowances. In freight service, payment of "dead days" in helper service; and alleged excessive overtime earnings in branch line turnaround service. In yard

service, exceptions to starting time rules to cover local service requirements, and alleged restrictive conditions caused by rules in yard schedules providing that the pay of a yard engineer or yard fireman shall continue until they reach the point at which they started work. In general, dead-heading resulting from the exercise of seniority or the mileage limitations of the Chicago joint working agreement; first-in, first-out rules which may interfere with assignments to regular runs; pyramiding by excess mileage and arbitrary money allowances of mountain or desert differentials expressed in money; and alleged burdensome conditions in connection with the use of hostlers.

The application of the increased rates of pay and the rules specified were ordered subject to the following conditions: individual railways may adopt any or all of the rules ordered by the board and may request the employees to enter into negotiations upon the rules remanded for negotiations but may not reject the increased rates. The enginemen in their two classes may elect to retain rates and rules now in effect in their entirety instead of the rates and such rules as the individual roads may elect to adopt. The individual roads shall on or before December 15 notify in writing the respective general chairmen representing the enginemen as to the rules that they desire to adopt or reject, and the general committeemen shall on or before January 1, 1925, advise in writing whether they desire to keep the existing rates and rules in their entirety or whether they will accept the rules specified in the decision and enter into negotiations upon the questions remanded for further consideration, which the interested roads desire to adopt, and of which notification has been given in accordance with the conditions set forth above.

If the representatives of the employees and of the railways shall agree as to the rules which they will accept and those which they will negotiate further, the increases in rates set forth in the decision shall become effective September 1, 1924, and the rules specified in the decision shall become effective on the first day of the day period following date of the advice from the employees' representatives. If any of the individual railroads should fail to notify the general chairmen of the organizations as to the rules which they desire to adopt or discuss, the rates of pay shall become effective on September 1 and the existing rules shall remain unchanged. If the representatives of the employees should fail to advise the management of their position on the rules embodied in the decision, the existing rates of pay and rules of agreements shall continue in effect until changed in the manner provided by the Transportation Act. In the event that the individual railways and representatives of the employees fail to arrive at an agreement on any of the items specified in the rules which were remanded for further negotiations, or shall disagree upon the application of the wage increases or the rules specified in the decision, the disagreements shall be handled in accordance with the Transportation Act.

By withholding its decision on three proposed new rules the board held open the docket for further testimony in order that it may continue the litigation now pending on the board's contention that it can compel testimony. These proposed rules are as follows:

"In all classes of service, engineers' and firemen's time will commence at time they are required to report for duty and shall continue until the time engine is placed on designated track or they are relieved at terminal. All advance time call rules are superseded and the management may designate the time for reporting for duty.

"Engineers, firemen and helpers required to temporarily perform a combination of road services, or engineers, firemen, helpers and hostlers required to temporarily perform a combination of yard services, during the course of a day's work (including overtime hours) will be paid on basis of continuous miles or time for the entire service not less than a

minimum day at the highest rate applicable to any service performed.

"Outside hostlers' rate will not apply on account of use of yard tracks in connection with handling and supplying power."

## Freight Car Loading

WASHINGTON, D. C.

**F**REIGHT CAR LOADING for the week ended November 22 continued to exceed the figures for the corresponding period of any previous year. The total was 1,010,122, an increase of 19,823 as compared with last year and of 63,480 as compared with 1922. Decreases as compared with the corresponding period of last year were shown in the

REVENUE FREIGHT CAR LOADING  
Week Ended Saturday, November 22, 1924

Districts	1924	1923	1922
Eastern .....	230,952	240,644	238,858
Allegheny .....	195,198	200,639	203,548
Pocahontas .....	50,430	36,749	30,073
Southern .....	157,097	146,199	139,194
Northwestern .....	132,588	131,248	118,960
Central Western .....	163,424	159,257	156,495
Southwestern .....	80,433	75,563	59,514
Total Western .....	376,445	366,068	334,969
Commodities			
Grain and Grain Products .....	59,697	52,082	54,906
Livestock .....	44,051	39,435	40,396
Coal .....	195,553	182,252	198,764
Coke .....	10,177	11,721	13,122
Forest Products .....	72,018	74,174	65,691
Ore .....	15,316	24,869	15,241
Mdse., l. c. l. ....	252,716	250,696	227,525
Miscellaneous .....	360,594	355,070	330,997
Total .....	1,010,122	990,299	946,642
November 15 .....	1,015,704	992,050	957,564
November 8 .....	994,504	1,036,221	944,186
November 1 .....	1,073,430	1,035,849	979,851
October 25 .....	1,112,345	1,073,841	999,718
Cumulative total, January 1 to date .....	44,176,923	45,670,308	39,048,387

loading in the Eastern and Allegheny districts and that of coke, forest products and ore, but increases were shown in all other districts and classes of commodities and the drop

as compared with the preceding week was only about 5,000 cars. The loading of coal and coke, however, was less than that for the corresponding week of 1922. The summary as compiled by the Car Service Division of the American Railway Association is given in the first column.

With the seasonal decline in loading the freight car surplus continues to increase and for the period November 8 to 14 amounted to 145,589 cars, including 79,111 coal cars and 45,304 box cars. For the Canadian roads the surplus was 4,500 including 2,300 box cars.

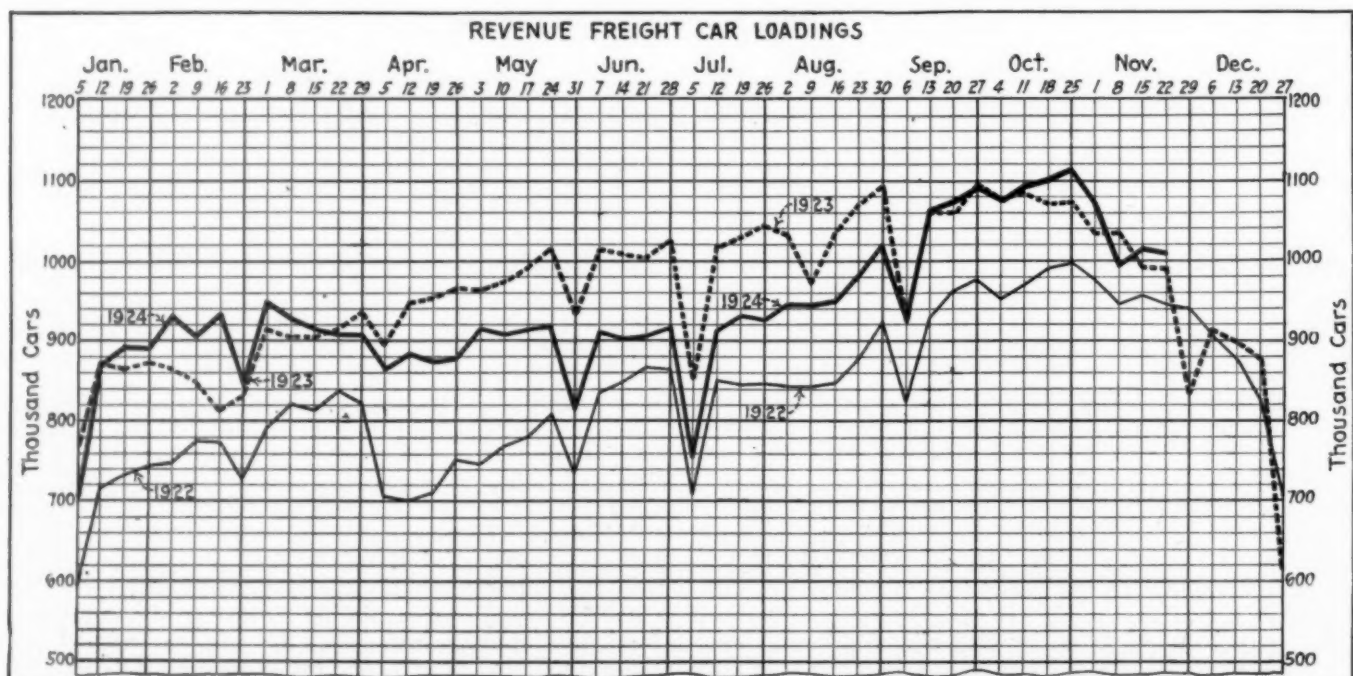
For the period ended November 22 the surplus was 166,101 cars, including 84,367 coal cars and 57,274 box cars. For the Canadian roads the surplus was 5,800 cars, including 3,300 box cars.

### Car Loading in Canada

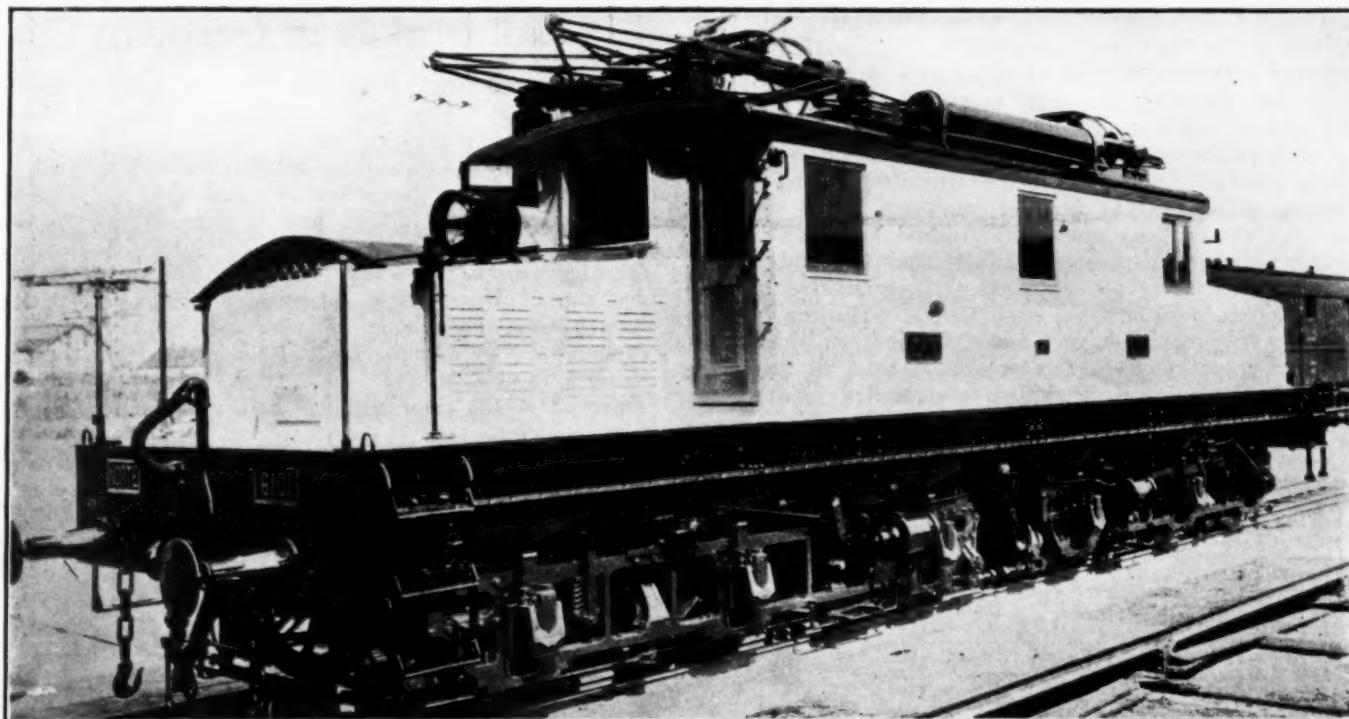
Car loadings at stations in Canada for the week ended November 22 recovered considerably from the previous week's slump due to the holiday, but it is evident that the peak was reached four weeks ago. Compared with the same week last year declines were recorded in grain of 2,428 cars, in lumber of 179 cars, and in pulpwood of 423 cars, but gains were made in live stock of 299 cars, in coal of 699 cars, in ore of 244 cars, in merchandise of 1,098 cars and in miscellaneous freight of 522 cars; the total being down only 130 cars.

TOTAL FOR CANADA

Commodity	For the week ended		
	Nov. 22 1924	Nov. 15 1924	Nov. 24 1923
Grain and grain products .....	17,793	15,098	20,221
Live stock .....	3,203	3,617	2,904
Coal .....	8,455	8,405	7,756
Coke .....	310	274	237
Lumber .....	3,555	3,543	3,734
Pulpwood .....	1,032	1,092	1,455
Pulp and paper .....	2,106	1,956	2,035
Other forest products .....	2,158	2,103	2,264
Ore .....	1,409	1,501	1,165
Merchandise, l. c. l. ....	15,690	13,736	14,592
Miscellaneous .....	12,502	12,326	11,980
Total cars loaded .....	68,213	63,661	68,343
Total cars received from connections .....	31,014	29,999	33,544
Cumulative totals to date—1924 .....			2,640,108
Cumulative totals to date—1923 .....			2,569,440







*Westinghouse-Baldwin-Naval Locomotive for The Northern Railway of Spain*

## Electric Locomotives for the Spanish Northern

Two Types Will Be Used Different in Design But Having Similar Characteristics

**E**LECTRIC operation as applied to a 38-mile section of the Northern Railway of Spain was described in the September 20, 1924, issue of the *Railway Age*. This article included a description of the six locomotives built by the General Electric Company. Six locomotives were also supplied by the Westinghouse Electric International Company.

The two types of locomotives have the same wheel arrangement and have characteristics which are almost identical. They are however strikingly different in appearance and design. The following description of the Westinghouse locomotives was prepared by W. R. Taliaferro, railway equipment engineer, Westinghouse Electric & Manufacturing Company.

Six 3,000-volt direct current regenerative electric locomotives complete with air brake equipment for the locomotive and vacuum brake equipment for the train brakes, have been furnished by the Westinghouse Electric International Company for the Spanish Northern electrification. The design of the mechanical parts has been furnished by the Baldwin Locomotive Works. These parts were built in Spain and the complete locomotives were assembled by La Sociedad Espanola De Construccion Naval.

The locomotives are of the six-axle type with two six-wheel swivel trucks. Each axle is driven through a single helical gear by an axle-mounted motor having a one-hour rating of 270 hp. All motors are wound for 1,500 volts and operate two in series from the 3,000 volt d.c. line.

The locomotive cab is of the steeple type, having a large hood at each end. These hoods contain the major part of the auxiliary apparatus, such as air compressor, exhausters,

blowers, motor-generator set, their automatic control apparatus and a storage battery.

All control equipment such as line, resistor and motor combination switches required to break heavy currents are of the electro-pneumatic unit type. Motor combinations and regenerative circuits are set up by electro-pneumatic cam-operated switches and regenerative regulating and stabilizing resistance switches are of the electro-pneumatic unit type, but without blowout coils.

The control is arranged for three speed combinations, consisting of series, series-parallel and parallel, or one-third, two-thirds and full speed. The series or one-third speed motor combination is obtained by connecting all six motors in series. In this combination, eleven resistance notches are provided and one running notch.

The series-parallel or two-third speed motor combination is obtained by connecting in parallel two sets of three motors in series. Here again, eleven resistance notches and one running notch are provided. The parallel or full speed motor combination is obtained by connecting in parallel three sets of two motors in series. Eleven resistance notches and one running notch are provided, but normally only nine of the resistance notches will be used or required.

Changes from one combination to another will be effected by means of a motor combination handle on the master controller, so arranged that the locomotive may be accelerated through the three speed combinations in sequence or in any one of the three motor combinations as desired. This arrangement of speed control makes the locomotive extremely flexible, which is of great importance where trains are to be handled on heavy grades and where adhesion is low and

the rolling stock light, as it is on most European railroads.

Due to the light track construction (light rails, wide tie spacing and light bridges) limiting the axle loading to a very low figure, it has been necessary to limit the total locomotive weight to 185,000 lb., which has been accomplished by special design throughout the locomotive to save weight wherever possible. In the control equipment, a large saving in weight has been accomplished by blowing air through the grid resistance which would be required for a self-ventilated grid resistance on a locomotive of this rating.

The locomotives are arranged for regenerative braking in all three motor or speed combinations. Thirteen running notches are provided in each motor combination, which gives a wide speed range in regeneration to meet all train and grade conditions. Regeneration is controlled in a similar

#### GENERAL DATA ON WESTINGHOUSE-BALDWIN-NAVAL LOCOMOTIVES

Service .....	Freight and passenger
Gage .....	5 ft. 6 in.
Wheel arrangement.....	0-6-0 + 0-6-0
Rigid wheelbase.....	13 ft. 0 in.
Total wheelbase.....	33 ft. 10 in.
Length over buffers.....	46 ft. 4 3/4 in.
Total height over cab.....	12 ft. 3 in.
Total height pantograph locked down.....	14 ft. 0 in.
Diameter of drivers.....	39.37 in.
Total weight on drivers.....	185,000 lb.
No. of motors.....	6
Type of motors.....	350-N
Gear ratio.....	18:61
One Hour Rating	
Horsepower .....	1,620
Tractive effort.....	28,000 lb.
Speed .....	21.7 m.p.h.
Continuous Rating	
Horsepower .....	1,340
Tractive effort.....	21,280 lb.
Speed .....	23.6 m.p.h.
Tractive effort at 25 per cent adhesion.....	46,250 lb.
Maximum safe speed.....	52 m.p.h.

manner to motoring, except that after the engineman has chosen the speed or motor combination in which he desires to operate and has placed the motor combination handle and accelerating handle in their correct positions, the speed and braking effort are controlled by the regenerative handle.

#### Air and Vacuum Brakes

The air and vacuum brake equipment consists of standard air brakes for the locomotive and vacuum brakes for the train. The locomotive brakes are controlled by an independent brake valve and also by the vacuum brake valve. The latter handles the locomotive air brakes, together with the vacuum train brakes in the same manner in which the automatic brake valve is employed on the standard locomotive and train air brake system. Compressed air for the air brakes and control is supplied by a motor-driven air compressor, and vacuum for the train brakes is maintained by two motor driven rotary exhausters.

The auxiliary equipment consists of a 3,000-volt motor-generator set which supplies low voltage power for control, lights, blowers, air compressor and exhausters and charges a floating storage battery which is carried as a reserve to operate an air compressor or exhauster in case of failure of line power.

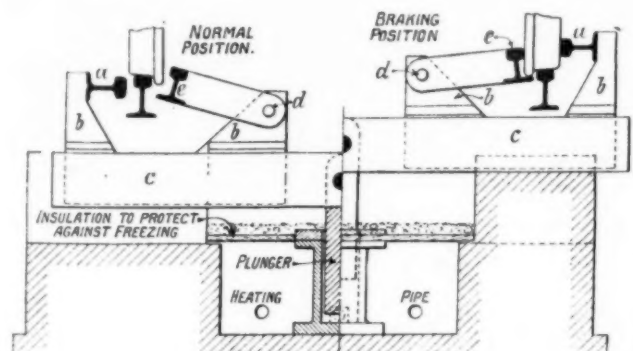
The ratings given in the table conform with the American Institute of Electrical Engineers' rules.

IN ORDER TO MAKE important connections at Winnipeg, a special train was recently operated over the Canadian Pacific from Broadview, Sask., to Winnipeg, Man., a distance of 264 miles, in 4 hours, 16 minutes, or at an average speed of 61.9 miles per hour. The run from Broadview to Brandon, a distance of 130.9 miles, was made in 2 hours, 20 minutes, or at 56.1 miles per hour, and the run from Brandon to Winnipeg, a distance of 133.1 miles, was made in 1 hour, 55 minutes, or at an average speed of 69.4 miles per hour.

## Rail Brakes in Germany

**H**YDRAULIC APPARATUS for checking the speed of freight cars, on a yard track, by gripping the rims of the wheels, functioning on the same principle as the pneumatic brake illustrated in the description published in the *Railway Age* of November 15, page 894, is in use at Cologne, Berlin and other places in Germany, and is described in a recent issue of the *Railway Gazette*, of London. The apparatus is called a rail brake. It is said to be the invention of Dr. Frolich, "railroad superintendent to the German Government" and the machinery is made by the Thyssen Works Company of Hamborn-on-Rhine. The essential features of the brake will be understood by an inspection of the right and left half cross sections shown in the drawing.

The plan of a hump yard where this apparatus is used shows a short rail brake near the summit and three others,



Frolich's Rail-Brake

somewhat longer, beyond the first diverging switches. Thus the total number is less than the total in the yard at Gibson, Ind., on the Indiana Harbor Belt, shown in the *Railway Age* referred to.

Referring to our drawing, it will be seen that when the inside braking rail is in braking position the flange of the wheel presses on its base, forcing this downward. Thus the weight of the car is utilized to graduate the braking.

The operator, by a single lever, raises or lowers the mechanism and makes all necessary adjustment.

In designing this apparatus, the inventor considered the use of compressed air, from a pneumatic interlocking nearby, but decided in favor of hydraulic power because of the leakage and waste when air pressure is used; also, the pneumatic plant is likely to be changed to all-electric. Steam pipes are provided for preventing interruption of the rail brake service by frost.

This apparatus is used with satisfaction in a hump yard where there has been a movement of 6,000 wagons a day; and the operators, after a little experience, are able to estimate very quickly and correctly the degree in which any car should be retarded.

INTRASTATE FREIGHT RATES on bituminous coal in Indiana will be investigated by the Interstate Commerce Commission at Indianapolis, Ind., on February 9.

THE JOINT TERMINAL grain committee of the Northwest Regional Advisory Board has recommended the removal of the embargo against grain and feed consigned to the Twin Cities or the head of the lakes, which embargo was recommended to the Northern Pacific, the Great Northern and the Minneapolis, St. Paul & Sault Ste. Marie on September 11 to avoid the congestion of terminals and delay to cars; and the embargo was removed on November 30.



# General News Department

A new operating division of the Missouri Pacific, to be known as the Little Rock division, and made up of parts of the present Arkansas, Memphis and Louisiana divisions, will be created effective December 1. The headquarters of the division will be at McGehee, Ark.

Charles H. Markham, president of the Illinois Central, has been elected chairman of the presidents' conference committee on Public Relations of the western railways. Mr. Markham succeeds Samuel M. Felton, president of the Chicago Great Western, who has resigned.

The Southern & Southwestern Railway Club, at its annual meeting in Atlanta, Ga., on November 20 elected as president for the ensuing year, J. F. Sheahan, mechanical engineer of the Atlanta, Birmingham & Atlantic; vice-president, A. J. Law (N. C. & St. L.), secretary, A. T. Miller.

A fine of \$1,000 was imposed on the Central Railroad of New Jersey in court at Elizabeth, N. J., on November 28, on account of a fatal accident at a grade-crossing in Bayway, on October 20. Both the railroad company and the crossing gateman were indicted on charges of manslaughter. The trial of the gateman is not yet reported.

H. G. Taylor, chairman of the Railroad Commission of Nebraska, will be the speaker at the meeting of the Western Railway Club at the Auditorium hotel, Chicago, on the evening of December 15. His subject will be "Regulation and the Future of the Railway." Mr. Taylor was until recently president of the National Association of Railroad and Public Utilities Commissioners.

One passenger was killed and 25 were injured when Pennsylvania passenger train No. 201, from Cincinnati, ran into the rear of train No. 109, from Pittsburgh, a short distance north of Englewood station, Chicago, on December 1, telescoping the rear car of the leading train. A signal at the station being out of order the engineman of 201 was given a hand signal, by the towerman, to proceed out of the station. But because of a drawbar pulling loose train No. 109 was unexpectedly stopped.

The Long Island Railroad committee on Public Relations has distributed posters throughout the United States, containing what is believed to be the most comprehensive radio program ever prepared for broadcasting in a single evening by one railroad system. This program will be broadcast from station WAHG, Richmond Hill, Long Island, N. Y., on December 15. The program will be almost entirely musical and will require four hours to complete. Almost one hundred entertainers will be required—all of them employees of the railway.

## Central Railroad Club to Meet December 10

The next meeting of the Central Railroad Club will be held at the Hotel Statler, Buffalo, N. Y., on December 10. R. L. Scott, trainmaster, New York Central, will read a paper on "Terminal Operation." The club will hold its annual meeting and dinner at the same hotel on January 8.

## New England Railroad Club "Canadian Night"

W. B. Lanigan, general freight traffic manager of the Canadian Pacific, will address the New England Railroad Club at its next meeting to be held on December 9 at the Copley-Plaza Hotel, Boston. The subject of the address will be "Ancient Trails and Modern Highways." This meeting will be the club's annual "Canadian night" and officers of Canadian railways are expected to attend in considerable number.

## Locomotive and Train Cost

### Statistics to Be Dispensed With

The Interstate Commerce Commission has announced an amendment of its order relating to the compilation of monthly operating statistics, to annul the requirement of the reports of locomotive and train costs, selected accounts, effective January 1, except as to the reports to complete the twelve months of 1924.

## Net Operating Income Shows Increase in October

The net operating income of Class 1 roads for October was \$127,105,100, an increase of \$23,329,400 as compared with last October. Operating revenues were \$572,600,000, a decrease of 2.6 per cent, and operating expenses were \$403,663,800, a decrease of 9.4 per cent. Net operating income for the first ten months of 1924 has been \$805,075,000, or at a rate of 4.31 per cent on the property investment.

## Five Passengers Burned to Death

At Wyandotte, Michigan, near Detroit, on the evening of December 3, an electric train of two cars, bound for Toledo and said to have been moving at very high speed, struck an automobile truck loaded with turpentine; and the wreck immediately took fire, burning to death five persons; and many others were injured in the wreck and by the fire. Most of the victims were in the parlor car which was the leading car of the train.

## Railway Business Association—

### Annual Meeting and Dinner

The annual meeting and dinner of the Railway Business Association will be held at the Hotel Commodore, New York, on December 11. At the dinner the speakers will be Selden P. Spencer, senator from Missouri, Samuel O. Dunn, editor of the *Railway Age*, and James A. Emery, counsel of the National Association of Manufacturers.

## Prize Contest for Fuel Economy Slogan

The Northern Pacific is conducting a contest for the selection of a slogan to promote economy in the use of fuel, in which prizes of \$50 and \$25 are offered, respectively, for the best and second best slogans submitted. The contest, which was announced October 30, to close December 10, is open to all Northern Pacific employees, each of whom may enter as many slogans in the contest as he chooses.

## Terminal Development

The address at the meeting of the Society of Terminal Engineers of New York on Tuesday evening, December 9, will be made by Charles Staniford, consulting engineer, and will cover matters relating to terminal development. The meeting will be held in the Engineering Societies Building at 8:00 p. m. and will be preceded by a get-together dinner at the Building Trades Club, 34 West 33rd street, at 6:15 p. m.

## C. & E. I. Asks Final Approval of A. T. C. Installation

W. J. Jackson, president of the Chicago & Eastern Illinois, has filed a petition with the Interstate Commerce Commission stating that the road has completely equipped that portion of its line between Chicago and Danville, Ill., with automatic train stop and control devices and has equipped its road locomotives on that division in conformity with the order and specifications of the commission; and is ready to have the installation inspected with a view of having it approved by the commission as provided in its orders. The commission is asked

to have the inspection made as soon as possible and to give its approval, if the installation is found to be in conformity with the order.

### Reduction in Grade Crossing Casualties

The intensive campaign carried on last summer by the American Railway Association to reduce the number of highway grade crossing accidents is to be credited with having saved a considerable number of lives, according to H. A. Rowe, chairman of the A. R. A. committee. During June and July, the first two months of the campaign, 346 persons were killed and 1,062 injured in grade crossing accidents, as compared with 405 killed and 1,043 injured during the same months in 1923. In view of the fact that the Department of Agriculture on July 1 showed an increase of 20 per cent in the number of automobiles registered in 1924, compared with 1923, the actual decrease of 59 in the number of lives lost affords ground for hope that the driving public is becoming awakened to the exercise of reasonable care in approaching and passing over railway tracks.

### Rondout Mail Robbers Sentenced

Sentences were given William J. Fahy and James Murray, participants in the Rondout (Ill.) mail robbery, by Federal Judge Adam C. Cliffe in Chicago on November 29 as a maximum on all 11 points of the indictments returned against them, which sentences total 177 years; but the judge ordered that the terms run concurrently. The sentences consist of five terms of 25 years each, five of 10 years and one of two years. The sentencing of the two men followed arguments for a new trial, based on 177 assignments of error. The United States Circuit Court of Appeals will grant a hearing on a writ of supersedeas and a stay of execution.

The robbery occurred on June 12 when armed bandits held up a northbound mail and express train on the Chicago, Milwaukee & St. Paul, 30 miles north of Chicago, and escaped in four automobiles with 42 pouches of registered mail containing money and bond shipments estimated at \$1,000,000 in value.

On December 2 the court denied a writ of supersedeas; but granted a writ of error, permitting an appeal to the United States Circuit Court of Appeals. The plea to be released on bail was denied.

### Maritime Provinces Still Dissatisfied

Sir Henry Thornton, president of the Canadian National, last week with his staff made a tour of the Maritime provinces to study means by which some of the complaints being made in that section of Canada can be met. In an address to the Board of Trade of Moncton, N. B., Sir Henry stated what was the policy of the Canadian National toward that part of the country, announced his desire for the naming of a small committee of Maritime business men to confer with him on problems of mutual concern, declared his readiness to sit down with E. W. Beatty, president of the Canadian Pacific, talk over the Maritime situation and co-operate with him in the solution of its problems, and also announced arrangement made by his company with the White Star line for a first class passenger steamship service from Halifax.

The greatest complaint of the Maritimes against the C. N. R. is the fact that this system has ports in the United States which it is alleged to favor over ports in the Maritimes.

### New York Railroad Club Dinner

The annual dinner of the New York Railroad Club will be held at the Hotel Commodore on Thursday evening, December 18. Dr. David Friday will speak on "What the Future Holds for the Railroads." Dr. Friday is professor of economics at the New School for Social Research, New York, and a consulting economist specializing in railway and financial problems. He was formerly president of the Michigan State Agricultural College, and prior to that was professor of economics at the University of Michigan and at New York University. While at the University of Michigan he frequently served as an expert in railway and public utilities valuation cases. During the war he served as an expert on taxation in the Treasury Department at Washington. Recently he has been called upon several times by the railroads for testimony in rate cases before various commissions.

Col. Douglas I. McKay, president of the Standard Coupler Com-

pany, is chairman of the Dinner Committee. Reservations for places should be made through F. O. Schramm, chairman of the Seating Committee, Pressed Steel Car Company, 55 Broad street, New York.

### "Safety Pays"

This is the title of a new motion picture which the New York Central is going to use in educating its employees in safe habits of work. The scenario is by Charles E. Hill, General Safety Agent of the New York Central Lines, and it has been produced by Bray Productions, Incorporated.

"Safety Pays" is a worthy successor of the other two New York Central films which have proved so popular during the past few years, being perhaps somewhat simpler, while fully as forceful in its appeal. The spectator's mind is directed steadily to the object in view, a careless trainman being killed, almost in the first scene, by stepping in front of a fast train. To many observers, "Tony Pasco," an Italian track foreman who preaches (and practices) safety with true Italian fervor, will appeal as a star, if not the



The Careless Machinist

star actor in the drama. The inevitable love story is well done. The heroine converts the careless young machinist to a safety advocate; and her power is due primarily to the fact that her own father had been run over and killed because of his own careless act.

The professional actors are of high grade and the railroad men perform their parts well. There is one railroad man in the opening scene, speaking before a general safety committee,—this is the introduction to the whole picture—who is not likely ever to shine as an expert in the histrionic world, but who without doubt will be popular, everywhere, in this exhibition; that is P. E. Crowley, president of the New York Central Lines.

Mr. Hill expects shortly to bring out another film, "Gambling with Death," depicting the lessons of the countless grade crossing horrors that now disgrace America.

### Farmers' Convention Opposes New Legislation

The National Farmers' Educational and Co-operative Union of America, in national convention in Oklahoma City, with delegates present from 26 states, on Friday, November 21, adopted a resolution declaring that "We fully recognize the all importance of and the relation that exists between the success of agriculture and the transportation interests of the American people," and further, that "We, the national union, are opposed to the radical legislation now offered before Congress which proposes to disrupt and repeal the present railroad labor laws, wherein the public, the railroads and organized labor are equally represented."

"We have faith in the belief that, perhaps with a few amendments to the present laws, a more efficient and economical relation may be had than today exists, recognizing as we do that the present railroad laws are the efforts of several years on the part of the railroads, organized labor and the public to adjust



and settle the grievances that have frequently arisen, that disturbed commerce and destroyed the profits of the farms and business in general.

"We, therefore, instruct our national representatives to oppose any change in our present railroad laws and especially such measures as the Howell-Barkley bill, now pending before Congress, which we regard as both dangerous to the peace and tranquillity that exists between capital and labor, and would be detrimental to the agricultural masses, and would recommend to the administration in power such amendments to the present law as will guarantee a reduction in freight rates and a continuance of the amicable relations that exist between the agricultural masses and the transportation systems of the country."

Charles S. Barrett, a member of the recently appointed Agricultural Commission, presided over this convention. The organization maintains national headquarters in Washington.

### Dominion Railway Board Agrees to Submit Crow's Nest Case to Court

After two hours of argument between counsel and the Dominion Railway Board, the latter last week agreed that the application of the three prairie provinces for leave to appeal to the Supreme Court of Canada from the Board's ruling regarding the Crow's Nest Pass Agreement would be granted. Chairman H. A. McKeown stated, however, that the form of the question which the court will be asked to answer will be determined this week by the Railway Board.

There was disagreement as to whether that form should be limited to one or embrace several points. Commissioner A. C. Boyce held strongly that one question would suffice, namely, whether, within the meaning of the Railway Act, the Crow's Nest Agreement is a "special" act curtailing the Railway Board's authority or jurisdiction. In the recent judgment of the Board in the Crow's Nest case the majority held it was not a "special" act and that the Board's authority was not restricted by its provisions.

Commissioner Boyce contended that the question to be asked the Supreme Court must raise the fundamental point as to whether or not the Railway Board has the power to set aside the Crow's Nest agreement. Eugene Lafleur, of Montreal, representing the Railway Association of Canada, argued that the whole point was whether the Railway Board could grant rates in excess of the Crow's Nest rates. The prairie provinces, represented by F. H. Chrysler, of Ottawa, and the city of Brantford, represented by W. T. Henderson, held that the Supreme Court, if it decided the main question against the decision of the Railway Board, should be asked to interpret the Crow's Nest pact in respect of discriminatory rates.

It is expected that the hearing before the Supreme Court will be held this month. On the 4th of this month another appeal of the prairie provinces from the Board's ruling on the Crow's Nest Agreement on points of fact will be heard by the federal Cabinet. This appeal, in effect, is that the Dominion government should suspend the recent judgment of the Railway Board until the whole question of a readjustment of the national freight rate structure can be dealt with at the next session of the Canadian Parliament, so that pending that revision, if approved, the West could enjoy the fullest effect of the lower Crow's Nest rates on westbound commodities.

### St. Paul Union Depot Officially Opened

The official opening of the new union passenger station at St. Paul, Minn., took place on Saturday, December 6, when the last portion of the main building was opened to the traveling public with fitting ceremonies. The project, which has been carried on by the St. Paul Union Depot Company, has required a number of years to complete, due to the fact that much of the new work is on ground previously occupied by the old facilities and that new structures have had to be put up without interfering with the operation of the 220 passenger trains and many transfer movements that the station handles daily.

Part of the new facilities have been in use for several years. The head house was completed and thrown open to traffic on April 5, 1920, and the construction of an elevated structure supporting six new tracks, with train sheds, platforms, and approaches thereto, on land formerly occupied as a waiting room and on newly acquired land, was completed on November 21, 1921. Part of the waiting room was finished and opened to the public on February

23, 1924. An article on the construction of the station up to that time appeared in the *Railway Age* of March 29, 1924, page 827. Since that time an extension to the waiting room has been added and approach tracks, train sheds and platforms have been completed.

The railways which are tenants of the new terminal are the Chicago & North Western, the Chicago, Burlington & Quincy, the Chicago Great Western, the Chicago, Milwaukee & St. Paul, the Chicago, Rock Island & Pacific, the Great Northern, the Northern Pacific, the Minneapolis, St. Paul & Sault Ste. Marie, and the Minneapolis & St. Louis.

### Motor Transport Conference in Boston

"How to Eliminate Wasteful Competition in Short-haul Transportation in New England" will be the keynote of the New England Motor Transport Conference, to be held at the Copley-Plaza Hotel, Boston, on December 8 and 9, according to a preliminary program for the meetings issued by the National Automobile Chamber of Commerce.

Besides the discussions which will center around this keynote, the conference includes highway sessions at which the highway program for New England will be discussed, and at which the municipal traffic congestion problem will be considered. J. Rowland Bibbins of Washington, D. C., an authority on city traffic planning, will be the chief speaker on the latter subject.

Robert C. Wright of Philadelphia, general traffic manager of the Pennsylvania, will lead a discussion on the use of motor trucks by railroads to replace local freight trains. Edward Dana, general manager of the Boston Elevated Railway, and W. J. Flickenger of the Connecticut Company, New Haven, Conn., will discuss the economics of motor bus operation by street railway companies. Another speaker will be C. L. Bardo, general manager of the New York, New Haven & Hartford.

Among those who have been invited to attend the meetings or send representatives, are the mayors of all New England cities; members of state highway commissions and their staffs; members of public utility commissions; members of chambers of commerce; railroads; electric railways; truck and bus associations; city traffic and planning board officials; members of the Traffic League of New England; students at Harvard and M. I. T. studying highway transport or highway engineering; members of the American Automobile Association, and others. The conference will be open to the public.

### Meetings and Conventions

*The following list gives names of secretaries, dates of next or regular meetings and places of meetings.*

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, May 5-8, 1925, Los Angeles, Calif. Exhibit by Air Brake Appliance Association.
- AIR BRAKE APPLIANCE ASSOCIATION.—John Wright, Westinghouse Electric & Manufacturing Co. Meeting with Air Brake Association.
- AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Drayer, 63 E. Adams St., Chicago. Next convention, 1925, Orlando, Fla.
- AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago. Annual meeting, June 23, 1925, Portland, Ore.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothchild, Room 400, Union Station, St. Louis, Mo. Next convention, June 16-19, 1925, Richmond, Va.
- AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—L. A. Stone, C. & E. I. Ry., Chicago.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borchardt, 202 North Hamilton Ave., Chicago, Ill.
- AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.

Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Next meeting, May 19-21, 1925, Kansas City, Mo.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York.

Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York.

Division II.—Transportation (including former activities of the

- Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.
- Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.
- Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Next annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.
- Construction and Maintenance Section.—E. H. Fritch.
- Electric Section.—E. H. Fritch.
- Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, March 12 and 13, 1925, Hotel Drake, Chicago.
- Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Exhibit by Railway Supply Manufacturers' Association.
- Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.
- Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Exhibit by Railway Supply Manufacturers' Association.
- Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, May 25, 1925, Kansas City, Mo.
- Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. L. Moorshead, Industrial Engineer, Erie R. R., New York, N. Y. Next meeting, May 13-15, 1925, San Antonio, Texas.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Exhibit and Supply Association of the American Railway Tool Foremen's Association.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.
- AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 22-26, Chalfonte-Haddon Hall, Atlantic City, N. J.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—33 W. 39th St., New York. Regular meetings 1st and 3rd Wednesdays in month, except July and August, 33 W. 39th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.
- AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 10 East Huron St., Chicago, Ill. Biennial convention, July 20, 1925, Chicago.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—P. R. Hicks, Room 1146, Otis Bldg., Chicago. Annual meeting, February 3-5, 1925, Congress Hotel, Chicago.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 17, 1925, Winnipeg, Canada.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Stn., Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.
- ASSOCIATION OF RAILWAY SUPPLY MEN.—E. E. Thulin, Peoples Gas Bldg., Chicago. Meeting with International Railway General Foremen's Association.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—B. J. Wilson, Pocket List of Railroad Officials, 605 Fisher Building, Chicago. Meeting with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charron St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.
- CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.
- CHICAGO CLAIM CONFERENCE. Personal Injury Section.—Parks C. Archer, General Claim Agent, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, City Club, 315 Plymouth Court, Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.
- CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.
- CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Adler Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.
- EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C. Annual meeting, May 14, 1925, Railroad Club, New York.
- FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesdays, preceding 3rd Friday in month, Room 1414, Manhattan Bldg., Chicago.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next meeting, August 18-20, 1925, Hotel Winston, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Next annual convention, May 26-29, 1925, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September, 1925, Hotel Sherman, Chicago.
- INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—F. S. Wilcoxen, Edna Brass Manufacturing Company, Cincinnati, Ohio. Meeting with International Railway Fuel Association.
- MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next convention, May 19-22, 1925, Hotel Sherman, Chicago.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)
- MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)
- MOBILE TRAFFIC & TRANSPORTATION CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m. on 2nd Thursday of each month, Battle House Hotel, Mobile, Ala.
- NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. I. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.
- NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York.
- NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York.
- NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.
- NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 825 South Michigan Ave., Chicago. Annual exhibition at convention of American Railway Engineering Association. Exhibit, March 9-12, 1925, incl.
- NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.
- NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.
- NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.
- PACIFIC RAILWAY CLUB.—W. S. Wellner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.
- RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C.
- RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa. Annual dinner, 7 p. m., Thursday, December 11, Hotel Commodore, New York.
- RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.
- RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.
- RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)
- RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.
- RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.
- RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.
- RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1143, Transportation Building, Chicago.
- RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section.)
- RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)
- RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa.
- RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.
- RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, 1925, Kansas City, Mo. Exhibit by Track Supply Association.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.
- SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.
- SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.
- SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.
- SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car. Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.
- SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.
- TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.
- TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Annual meeting, September, 1925, Chicago. Exhibit by Railway Equipment Manufacturers' Association.
- WESTERN RAILWAY CLUB.—Bruce V. Crandall, 189 West Madison St., Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.
- WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 138 W. Madison St., Chicago, Ill.



## Traffic News

H. E. Hayward, general agent of the Canadian Pacific at Kobe, Alaska, has been elected chairman of the Trans-Pacific Freight Bureau, to succeed W. W. Campbell, general agent for the Pacific Mail Company.

The ninth regular meeting of the Trans-Missouri Kansas Regional Advisory Board will be held at the Hotel Baltimore, Kansas City, Mo., on December 17. Co-operative shipping and the question of car shortages will be discussed.

The Missouri Pacific has established sleeping car service between St. Louis, Mo., and Omaha, Nebr., by way of Kansas City, the car leaving St. Louis daily at 2:02 p. m., and arriving in Omaha the next day at 7:15 a. m. Returning it leaves Omaha at 1:55 p. m. and arrives at St. Louis at 6:55 a. m. the next morning.

The Traffic Club of New York has elected officers for the ensuing year as follows: President, W. A. Schumacher, United Fruit Company; vice-presidents, W. S. Cowie, Seamans Paper Company, and R. G. Narelle, Atlantic Lighterage Company. Board of Governors, W. C. Connor, C. & E. I.; C. H. Mitchell, C. M. & St. P.; E. A. Bardgett, Cunard Line.

The number of special trains run by the New York, New Haven & Hartford to and from New Haven on the occasion of the Harvard-Yale football game, on Saturday, November 22, was 92; total number of passengers on these trains, 50,134. On account of a severe rain-storm the travel both from New York and from points east, was lighter than in former years. From 10 a. m. until 1:30 p. m. there was a train unloaded at New Haven every three minutes, 36 seconds, on the average.

The Indiana Public Service Commission has filed an application with the Interstate Commerce Commission asking that western trunk lines be required to publish ordered schedules of reduced freight rates from Indiana to St. Paul, Minn., and Missouri river points without further delay. The complaint charges that the western carriers had until August 20 to publish tariffs putting into effect new rates to these points; but instead had endeavored to bring Indiana into a general investigation of class rates throughout the western trunk line territory and thereby bring about a general freight rate increase.

Reduced tariffs on coal from West Virginia into the northwest territory, filed with the Interstate Commerce Commission by the Chesapeake & Ohio, the Norfolk & Western and the Louisville & Nashville have been withdrawn following complaints filed by Illinois and Indiana coal operators, and by consumers in the affected territory, to the effect that the reduction threatens disaster to the coal industry in the two states. The rates were withdrawn on the understanding that a survey of the rate structure in dispute would be made and that modified reductions would be filed after January 1. The action was taken at a conference in Washington on November 26 between members of the Interstate Commerce Commission Suspension Board and representatives of the lines interested. The proposed rates that were filed were to become effective on December 5 and 6.

The Rock Island Magazine for December is dedicated to the state of Oklahoma, in which the Rock Island has 1,350 miles of line. This issue is the first of a series of special numbers of the magazine to be devoted to the activities of the states through which the Chicago, Rock Island & Pacific operates. The February magazine will be devoted to Kansas. The front cover of the present issue depicts an Indian watching the coming of the railroad. The contents consist of a foreword by the governor of Oklahoma, articles on "The Indians of Oklahoma," "The Chisholm Trail," "Many Students from Rock Island Railroad Families in the University of Oklahoma," "How Indians Have Carved Their Way into Civilization," "Rock Island Home Owners in Oklahoma," "Oklahoma From the Cab of a Locomotive," "Tishomingo, Named for the Chief of the Chikasaws," "McAlester, the Pittsburgh of the Southwest," and "Shawnee Going Ahead in True Western Spirit."

## Commission and Court News

### Interstate Commerce Commission

On petitions filed by the American Railway Express Company and the Southeastern Express Company the commission has postponed until March 1, 1925, the effective date of its order of May 17, 1924, in the Express Rates (1922) case.

### Eastern Freight Rate Investigation;

#### Hearings in February

By order entered May 13, 1924, the Interstate Commerce Commission, upon petition of carriers and of many shippers, instituted an investigation into the interstate both class rates and rail-and-water, with a view to determining whether the rates are in contravention of the interstate commerce act. On May 20, 1924, relief from the fourth section with respect to said class rates was denied, carriers having then expected to propose revised rates in conformity with the fourth section.

Pursuant to the commission's request the carriers have published proposals for the readjustment of class rates: (a) within eastern trunk line territory; (b) between eastern trunk line and New England territories and central territory (c) within central territory; (d) between central territory east of the Indiana-Illinois line and Mississippi River and Illinois points; (e) within New England; and (f) between New England and eastern trunk line territory.

The first hearing in this investigation will be held at Washington, beginning February 4, 1925, according to an announcement by Commissioner Eastman, when the respondent carriers will be expected to submit consecutively such proposals and evidence as they may wish to offer with respect to all the rates under investigation. They are requested to announce as soon as possible the order in which the various topics will be presented.

Following the presentation of carriers' evidence an adjournment will be taken for a brief period and the time and place of further hearings will be announced later.

It will not be the primary purpose of the inquiry, the commissioner says, either to add to or subtract from the aggregate revenues of the carriers, but rather to adopt a class-rate structure which will be as simple as it can be made, with due regard for the purposes that class rates ought to serve. This does not mean, necessarily, that proposed rates will be rejected upon the ground that they increase or decrease aggregate revenues. Before the proceeding is closed it will be the purpose of the commission to determine revenue effect, as nearly as may be, by some form of traffic test. In appraising revenue effect, the intrastate rates will be taken into consideration, and evidence in regard to such rates will be freely admitted at the hearings. It is hoped to have the co-operation of the state commissions in the inquiry.

The order instituting the investigation, since it contains no reference to "foreign commerce," will be construed as excluding consideration of import and export class rates.

Some of the questions to be considered in this investigation are as follows:

(1) Do conditions warrant a single level of class rates throughout official territory? If not, what exceptions? How justified?

(2) Should all class rates throughout official territory be on a distance-scale basis? If not, should the rates for hauls within each of the three divisions of that territory and for the shorter inter-division hauls be on a distance basis, with the inter-division rates for longer distances on a specific or group basis; and if so, should the group rates be based upon a distance scale using average distances to and from the groups, or how should they be determined? The carriers propose, between eastern trunk line and New England territories and central territory, to preserve substantially the present port and percentage group adjustments. If this plan be followed, what if any changes in the existing group boundaries should be made?

(3) If distance-scale rates are adopted in whole or in part, on what plan should the distances be computed; by what considerations should the commission be guided in fixing the rates for the initial distance; and what should be the rate of progression, and

why? This involves the proper relationship between rates for the longer and rates for the shorter hauls.

(4) How many classes should there be and what should be the percentage relationships of the lower classes to first class, and why? In the rates proposed by the carriers, the same number of classes that now exist in official territory have been used and the relationship between the classes is that followed in *C. F. A. Class Scale Case*, 45 I. C. C. 254, and *Proposed Increases in New England*, 49 I. C. C. 421. It should be understood, however, that the commission is not committed to any particular number of classes or to any particular percentage relationship of classes and that evidence should be presented to indicate the adjustment best fitted to meet the present and future needs of commerce. While the classification is not in issue, additional classes could be provided with an appropriate renumbering of existing classes, such additional classes to be utilized in connection with subsequent changes in classification, subject of course to review by the commission. It is possible that such additional classes might afford a convenient substitute for certain commodity scales and classification exceptions of broad application.

(5) A desirable result of the investigation would be the lessening of complaints of discrimination and prejudice as between competing points or traffic, not only within official territory, but with adjacent territories. Should rates within official territory be constructed in such manner as to harmonize as nearly as possible with rates in adjacent portions of southern and western territories \* \* \*? The question may also arise whether proportional rates lower than the locals should be established to and from certain territorial gateways. At the first hearings, carriers should either defend their present proposals or substitute other proposals which they are prepared to defend.

(6) Where present rates appear to be indefensible to what extent may the commission properly be influenced by the fact that the adjustment is one of long standing?

(7) Fourth section departures. If relief is desired from section 4, irrespective of whether relief has been granted or denied as to existing rates, the situations should be presented. The commission must not permit the establishment of any charge to or from the more distant point that is not reasonably compensatory. To meet this statutory requirement it may be necessary for the commission to impose restrictions. It has been suggested that relief shall not be made to apply to circuitous routes that are more than a certain per cent longer than the short line; or that the relief be not made to apply when the rate which is to be established by the circuitous line to meet short-line competition is less than a certain per cent of the rate under the distance scale, where one is prescribed, for the mileage of the circuitous line.

Testimony with respect to particular routes or situations will not be expected at the first hearings, except to illustrate and make clear the character of relief desired, and with this exception will perhaps not be needed at all.

(8) Should rail and water rates be constructed on the basis of a differential relationship with the corresponding all-rail rates or on the basis of a distance scale using constructive mileage for the water haul? It may be that a mere desire to maintain existing relationships to all-rail rates will not be deemed sufficient justification for departures from the fourth section in making rail-and-water routes.

The above suggestions are offered as indicative of some of the important lines of information, but are not intended to exclude evidence upon any other points.

Since the record promises to be lengthy, every effort, says the commissioner, should be made to condense evidence into the smallest possible compass. Explanations of exhibits which duplicate at length what is shown on the face of the exhibit should be avoided. Discussion of past decisions of the commission should ordinarily be reserved for brief and argument.

## State Commissions

The order which was issued by the Public Service Commission of Georgia on September 26 making sweeping reductions in freight rates on fertilizer has been suspended by a temporary injunction issued by the Federal court, in a suit filed by the short line railroads of the state. The reductions ordered are said to have averaged 26 per cent; and the plaintiffs averred that, as fertilizer forms a large part of the freight on their roads, the losses because of the prospective low rates would be severe.

## Labor News

The train dispatchers on eight railways have applied to the Railroad Labor Board for wage rates of \$275 a month instead of the present rate of \$235. The dispatchers also ask for vacations of two weeks annually, with pay.

### Trainmen to Be Heard

As an aftermath of the campaign carried on this year by the Order of Railway Conductors and the Brotherhood of Railroad Trainmen for wage increases the Railroad Labor Board will hear arguments on December 11 on proposed wage increases for train service employees of eleven roads situated in all parts of the country; roads which were not parties to the agreements which already have been made. The advances now proposed average about 12 per cent; but on the roads which have already made agreements offers of five per cent increases have been accepted by the brotherhoods. Proposed changes in working rules will be considered at the same hearing.

### Trackmen's Overtime Rates Fixed

An order that maintenance of way employees on 20 railroads in the east and central west shall receive time and one-half for overtime, after ten hours and for Sunday and holiday work was entered by the Railroad Labor Board on December 1, in a decision affecting approximately 585,000 employees. The only employees excepted in the decision are those who are engaged in continuous service whose work is in the monthly rather than the six-day week classification. The decision upholds the rule that section men shall receive straight time for the ninth and tenth hour of continuous work beyond the eight-hour limit but grants overtime at the rate of time and one-half for work beyond the tenth hour and for work on Sundays and holidays, this to be computed on the minute basis. The board denied the request of the employees for the payment of double time after 16 hours service. The employees were represented in the dispute by the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers.

### A. F. of L. Condemns Enginemen's Brotherhood

The action of the chairman of the Brotherhood of Locomotive Engineers, in refusing to pay the union scale of wages in the brotherhood's mines in West Virginia and in replacing union miners with non-union workers, was condemned by the American Federation of Labor in resolutions adopted at the annual convention at El Paso, Tex., on November 22. The committee on resolutions reported to the convention that it had found there had been a strike in effect in four mines of the company in West Virginia since April 1, due to the failure of the company to renew a wage agreement; that the officers of the United Mine Workers of America had made repeated efforts to reach an agreement with the Brotherhood; that the miners and their families have been evicted from company houses and strike breakers have been employed.

In commenting on the adoption of the resolution, John L. Lewis, president of the Miners' Union, declared that "the refusal of the Coal River Collieries to deal with the United Mine Workers has been a scandal in the entire organized labor movement."

The convention also denounced the United States Railroad Labor Board and endorsed the Howell-Barkley railroad labor bill now pending in Congress.

### Advances and Denials for Telegraphers

In the decision on the dispute between the Order of Railroad Telegraphers and five railways the Labor Board has awarded increases to certain classes of employees on three of the roads and denied increases on two other roads. Telegraphers, telephone operators, agents, towermen and block operators on the Atchison Topeka & Santa Fe were granted a wage increase of three cents an hour. Those on the Cincinnati, Indianapolis & Western an



increase of three cents an hour, and those on the Denver & Rio Grande Western one cent an hour. Telegraph employees on the Central of New Jersey and the Southern Pacific System were denied increases as were the agents at small non-telegraph stations on the Santa Fe, the Cincinnati, Indianapolis & Western and the Denver & Rio Grande Western. In order that existing inequalities in the wage rates of various employees may be removed the board ordered that the increases now granted shall be distributed by joint action of representatives of managements and employees, in such manner as to bring about just and equitable rates. New rules relating to intermittent service, to overtime, to deadheading and to station agents on the Cincinnati, Indianapolis & Western; and relating to the scope of the agreement and to starting time on the Southern Pacific, were also ordered in effect by the board. These rules are similar to those in effect generally on railroads throughout the country.

## Labor Board Decisions

### Interpretation of Intermittent Service Rule

A decision on questions raised in regard to the meaning and intent of the Intermittent Service Rule of Decision No. 630 has been made by the Railroad Labor Board. The rule in question reads as follows: "Where service is intermittent, 8 hours actual time on duty within a spread of 12 hours shall constitute a day's work. Employees filling such positions shall be paid overtime for all time actually on duty or held for duty in excess of 8 hours from the time required to report for duty to the time of release within 12 consecutive hours, and also for all time in excess of 12 consecutive hours computed continuously from the time first required to report until final release. Time shall be counted as continuous service in all cases where the interval of release does not exceed one hour." In answering questions raised in regard to the rule, the Labor Board decides that the meal period provided for in other rules of the decision cannot be considered as a part of the period of release under the Intermittent Service Rule. The board also decides that a carrier is within its rights in applying Rule 49 to a position or positions without first reaching an agreement with the representatives of the employees as to whether the rule is applicable, the employees if they disagree with the management to take up the matter in accordance with the provisions of the Transportation Act. In interpreting the language of the rule reading: "Intermittent service is understood to mean service of a character where during the hours of assignment there is no work to be performed for periods of more than one hour's duration and service of the employees cannot otherwise be utilized," the board rules that whether the carrier is the sole judge as to whether or not there is work to be performed and if the service of the employees can otherwise be utilized shall be determined by the actual conditions in every case. The board rules also that it is not permissible to place an employee under the provisions of this rule by assigning his work to other employees so as to make it possible to allow him the period of release prescribed by the rule. Finally, the board rules that it is not permissible to place an employee on an intermittent service assignment where it can be shown that there is work to be performed during the period of release, even though the work can just as well be accomplished in a 12-hr. spread. An opinion dissenting from the decision of the board on the last two questions was rendered by Messrs. Elliott, Baker and Higgins, board members representing the railways.—Interpretation No. 3 to Decision No. 630.

A DOZEN OR MORE passenger station buildings of the Boston & Maine in the vicinity of Boston, having been abandoned for railroad business because of the falling off in passenger traffic, are now used for other business, according to the Boston Transcript; or they are empty, awaiting suitable tenants. The Fresh Pond and Mt. Auburn buildings have been rented to Catholic clubs. Union Square in Somerville and West Cambridge stations are stores. In Park street, Somerville, there is an upholsterer. Wellington, in the city of Medford, is a dwelling house. West Everett and East Everett are empty, and Riverview is in the same condition, waiting for a tenant. The station at Roberts is now a restaurant and Waverly and Reading Highlands are boarded up. Prospect Hill has just been closed up. These conditions are to be found also in a few places on the Boston & Maine more remote from Boston.

## Foreign Railway News

### German Railways Secure Loan in New York

The German Government Railway Company (Deutsche Reichseisenbahngesellschaft), the semi-private corporation organized under the Dawes plan to take over the railway lines owned by the German government, secured a short-time loan of \$15,000,000 in the New York market last week. The loan was heavily oversubscribed.

### Disastrous Accident in England

An express train bound from Liverpool, England, to Blackpool on the London, Midland & Scottish on November 3 was derailed between Kirkham and Lytham, resulting in the death of seven persons and injury to many more. The cause of the derailment was not established. The train collided with a signal tower which was overturned as was the locomotive and two coaches. The wreckage caught fire.

### Austrian Strike Settled

The Austrian railway employees have returned to work with an increase of 6 per cent in wages, instead of the 9 per cent at the refusal of which they went on strike. The employees based their demands on the increased cost of living and the government refused them for fear of overspending the railway budget. The employees have, under the agreement under which they returned to work, reserved the right to seek still higher wages if living costs should continue to rise.

### Early Revenue Gains by Chinese

#### Roads Counteracted by War

PEKING.  
The Chinese government railways reported revenues aggregating \$60,557,000 for the first six months of the current calendar year. This is \$9,700,000 above the revenues for the same period and same lines last year and is more than \$8,000,000 more than the earnings for the entire year of 1915, the first year of combined statistics. The principal increases for the year were \$4,250,000 on the Peking-Hankow, \$1,500,000 on the Tientsin-Pukow and \$1,375,000 on the Shantung line. A larger proportionate increase was made on the Lung-Hai which shows a gain of more than thirty per cent. There were no important decreases. This gain, however, will be entirely counteracted by losses during the latter half of the year due to military usurpation of the lines.

The regularity of military traffic which characterized the first two weeks of the present civil war has entirely disappeared until the Peking-Mukden line is practically paralyzed. The first units to move were the better disciplined forces under the command of Wu Pei-fu personally, or brigadiers owing close allegiance to him. These forces have had the benefit of several campaigns along the railways and have learned considerable. But during the later weeks forces from provinces more remote and under the command of officers who are allies rather than subordinates of Wu Pei-fu have come up. These have neither experience nor discipline. The result is that trains not only block stations but also main line. Troops within ten miles of Peking have been without rations for 36 hours at a time and fodder has so failed the cavalry and artillery at stations more advanced that a large number of animals have died in the cars. It has been practically impossible to bring back the wounded from the front nor have native Red Cross units been able to get anywhere near the front lines. Casualties have been the heaviest of any in native fighting since the Taiping rebellion.

On October 15 local papers contained an advertisement by the Peking-Mukden railway that:

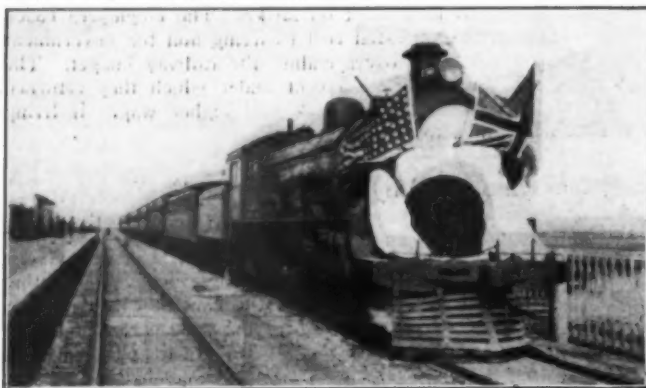
"Due to congestion caused by military traffic, it has been impossible to maintain passenger service between Peking and Tientsin at present."

The preservation of an open line from Peking to the sea is guaranteed by China in the Protocol providing for the withdrawal of foreign expeditionary forces after the Boxer Uprising. The allied nations maintain small forces in China up to the present moment for the alleged purpose of enforcing this provision. Dur-

ing the past few years, however, Chinese military operations have invariably blocked the line for days at a time, but this is the first time that the railway has gone so far as to advertise that the treaty stipulations were not being observed. On these occasions in the past an international troop train has been organized and forced over the lines at intervals. While this action may serve to give notice that the powers are reserving their legal rights in the matter, no practical transportation service is rendered by such a train. Rather, the line is congested that much more. And in these days the running of such a train acts upon the radical mind as an irritant at the same time advertising the impotency of the foreign powers to act up to their pretensions.

In the southeast the situation is rapidly clearing. Government forces now have complete control of the Shanghai-Nanking and Shanghai-Hangchow lines. There is a great dislocation of rolling stock. Locomotives are in bad condition from standing continuously under steam without cleaning for so many days. On the Shanghai-Hangchow line the two bridges over the Whangpoo river were blown up. These are the most important bridges on the line, for each consists of two 200-ft. spans. It is estimated that six months will be required to replace them but in the meantime temporary piling will be used to support trestles around the breaks.

The war necessities of Chang Tso-lin caused him to come to terms with the Soviet representatives over the Chinese Eastern Railway in an agreement recently announced. Considerable feeling has been expressed in Peking over the action of the Soviet representatives in making a formal agreement with a declared



Underwood & Underwood

#### International Train (U. S., Great Britain and Japan) Run Through War Zone in China Under 1901 Protocol

rebel. However, the agreement distinctly refers to Manchuria as "provinces" of China. The "provincial" agreement differs from the earlier "national" agreement only in a few particulars, the most important of which are (1) that the railway will become the property of China without payment in 60 years (instead of 80), (2) that the original agreement of 1896 will be revised within the next four months by a commission appointed for the purpose, and (3) that the statutes of the railway will also be revised by the board of directors within a similar period of four months. Following the announcement of the agreement the five appointees of the Soviet government took their seats on the board of directors. Among these were M. Danilevsky who held the position of vice-president on the former board. Gen. Pao Kuei-ching has taken the appointment as president in succession to Dr. C. C. Wang. The new board of directors promptly discharged B. V. Ostroumoff as general manager, and his right-hand man, Mikhailoff, chief of the economics bureau. A short time later M. Stepunin, the chief accountant, in reality an appointee of the Russian-Asiatic Bank, was also discharged. Immediately upon their discharge these men were placed under arrest and have been kept in confinement to date along with one Gavbrilloff, a Russian merchant, who a year ago figured in a rail purchase which proved expensive to the railway and in a claim for customs refunds which fugitive representatives of the former Merkuloff government at Vladivostock attempted to collect from the railway. These men are still confined. The new general manager is A. N. Ivanoff, who announces that the trans-Siberian train *de luxe* will be put into service within the next fortnight.

## Equipment and Supplies

### Locomotives

THE BOURNE FULLER COMPANY, Cleveland, Ohio, is inquiring for one switching locomotive.

THE FLORIDA EAST COAST has ordered 12 Mountain type locomotives and 6, 0-8-0 switching locomotives from the American Locomotive Company.

THE NEW ENGLAND FUEL & TRANSPORTATION COMPANY has placed an order for one 0-8-0 switching locomotive with the Baldwin Locomotive Works.

THE SOUTHERN PACIFIC, reported in the *Railway Age* of November 22 as inquiring for 18 2-10-2 type locomotives, has ordered from the American Locomotive Company 15 three-cylinder, Southern Pacific type 4-10-2 locomotives. These locomotives will have the same dimensions as the one previously ordered, and reported in the *Railway Age* of November 1.

THE LOUISVILLE & NASHVILLE has ordered 8 Mikado type locomotives, and 8, 0-8-0 switching locomotives from the American Locomotive Company. The Mikado type will have 27 in. by 32 in. cylinders and a total weight in working order of 322,000 lb. The switching locomotives will have 25 in. by 28 in. cylinders and a total weight in working order of 217,000 lb.

THE NEW YORK CENTRAL, reported in the *Railway Age* of November 15 as inquiring for from 25 to 50 locomotive tenders, has ordered 35 tenders of 15,000 gal. capacity from the American Locomotive Company and 15 tenders from the Lima Locomotive Works; 14 of these tenders are for the New York Central, 11 for the Michigan Central and 25 for the Cleveland, Cincinnati, Chicago & St. Louis.

### Freight Cars

THE FORD MOTOR COMPANY is inquiring for 25 caboose cars.

THE NORTHERN PACIFIC is inquiring for 1,000 automobile cars of 40 tons' capacity.

THE WABASH has ordered 1,000 box cars from the American Car & Foundry Co.

THE WESTERN FRUIT EXPRESS has ordered 1,757 steel underframes from the Ryan Car Company.

THE ST. LOUIS SOUTHWESTERN has renewed its inquiry for 1,000 double-sheathed box cars of 40 tons' capacity.

THE LOUISVILLE & NASHVILLE is inquiring for 400 low side gondola cars of 55 tons' capacity and 600 all-steel, drop bottom gondola cars of 50 tons' capacity.

THE CRANBERRY CREEK COAL COMPANY, Hazleton, Pa., has ordered 2 additional 30-yd. extension side air operated dump cars from the Clark Car Company.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for from 500 to 1,000 automobile cars of 50 tons' capacity and is expected to enter the market soon for 1,000 box cars and 500 gondola cars.

THE CENTRAL OF GEORGIA, reported in the *Railway Age* of November 15 as inquiring for 500 steel underframe box cars of 40 tons' capacity, has ordered 500 box cars from the Tennessee Coal, Iron & Railroad Co.

THE MISSOURI PACIFIC is inquiring for a total of 4,000 cars, including 2,000 box cars of 40 tons' capacity, 800 automobile cars of 40 tons' capacity, 200 automobile cars of 50 tons' capacity, 250 hopper cars and 750 gondola cars.

THE FLORIDA EAST COAST, reported in the *Railway Age* of November 22 as inquiring for 10 tank cars of 10,000 gal. capacity has ordered this equipment from the General American Tank Car Corporation. This company is now inquiring for 20 caboose cars.



## Passenger Cars

THE FLORIDA EAST COAST has ordered 12 coaches and one dining car from the Pullman Car & Manufacturing Corporation.

THE MISSOURI PACIFIC is inquiring for 6 divided coaches, 9 combination mail and baggage cars, one combination passenger and mail car, 10 mail storage cars and 10 baggage cars.

THE DELAWARE, LACKAWANNA & WESTERN, reported in the *Railway Age* of November 1 as inquiring for 30 steel express cars, has ordered this equipment from the Pressed Steel Car Company.

## Iron and Steel

THE NORFOLK & WESTERN is inquiring for 100 tons of steel for bridge repairs.

THE HOCKING VALLEY has ordered 5,000 tons of rail from the Carnegie Steel Company.

THE VIRGINIAN is inquiring for 200 tons of steel for a building at Mullins, West Virginia.

THE CHESAPEAKE & OHIO is inquiring for 200 tons of steel for bridge work in West Virginia.

THE LONG ISLAND is inquiring for about 150 tons of steel for bridge work at Long Island City.

THE CHICAGO, ROCK ISLAND & PACIFIC is expected to enter the market for 30,000 tons of rails.

THE ATCHISON, TOPEKA & SANTA FE has ordered 25,000 tons of structural steel for 1925 bridge work from the American Bridge Company.

THE SOUTHERN RAILWAY has ordered 51,500 tons of rail from the Tennessee Coal, Iron & Railroad Company and 2,800 tons from the Illinois Steel Company.

THE ILLINOIS CENTRAL has ordered 6,400 tons of structural steel for shop buildings from the American Bridge Company and is inquiring for 585 tons for its Burnside shop addition.

THE ALASKA RAILROAD has ordered 580 tons of structural steel for a bridge over the Nenana river and 3,067 tons for other bridges along its main line from the American Bridge Company.

## Machinery and Tools

THE WABASH has placed an order for a 6-ft. radial drill.

THE FLORIDA EAST COAST has ordered a 150-ton wrecking crane from the Industrial Works.

THE ATCHISON, TOPEKA & SANTA FE has ordered two 25-ton locomotive cranes from the Industrial Works.

THE SOUTHERN RAILWAY has placed orders for additional tools as follows: A 90-in. locomotive journal turning lathe; 84-in. bor-

ing and turning mill; 36-in. by 16-ft. lathe, and a heavy 36-in. by 10-ft. planer.

THE CHICAGO, BURLINGTON & QUINCY has ordered one 20-ton locomotive crane from the Industrial Works, and one 10-ton, 27-ft. span, 3-motor gantry crane from the Milwaukee Electric Crane & Manufacturing Co.

## Track Specialties

THE LOUISVILLE & NASHVILLE has ordered 800 tons of tie plates from the Tennessee Coal, Iron & Railroad Company.

THE MISSOURI PACIFIC has divided an order for 30,000 tons of tie plates and a quantity of spikes and bolts between the Inland Steel Company, the Illinois Steel Company and the Scullin Steel Company.

## Signaling

THE CHESAPEAKE & OHIO is to install 40 Union Style "R" color-light automatic block signals, operating from d.c. track circuits, between Clyffside and Russell, Ky.

THE CHICAGO, MILWAUKEE & ST. PAUL has ordered from the Union Switch & Signal Company an 8-lever Saxby & Farmer Interlocking machine to be installed at Bettendorf, Iowa.

THE ILLINOIS CENTRAL has ordered from the Union Switch & Signal Company a complete new Saxby & Farmer interlocking 13 working levers to replace a similar machine at Sturgis, Ky., which was recently destroyed by fire.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company new electric lever units and new mechanical locking for installation at "DY" Cabin, Sunbury, Pa.; also similar material for Clarke Junction, Ind., and Whiting, Ind.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered from the Union Switch & Signal Company 60 SLV-13 vane line relays, 188 air-cooled transformers, with reactors and resistances for use in connection with automatic train control installations.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company an electro-mechanical interlocking machine, 7 working levers, for Dunkirk, Ohio; one with 16 working levers for Plymouth, Ind.; and one with 7 working levers for Columbia City, Ind.

THE GREAT NORTHERN has ordered from the General Railway Signal Company the materials for complete automatic block signaling on 400 miles of its line. From Williston, N. D., west to Wolf Point, Mont., 107 miles, and from Havre, Mont., to Cut Bank, Mont., 130 miles, color-light signals will be used, type D. Semaphore signals will be installed on sections where semaphores are already in use, namely, between Cut Bank and Blackfoot, 26 miles; between Summit, Mont., and Java, 15 miles; and between Columbia Falls, Mont., and Whitefish, 8 miles.

LOCOMOTIVES ORDERED, INSTALLED AND RETIRED

Month	Domestic orders reported during month	Installed during month	Aggregate tractive effort	Retired during month	Aggregate tractive effort	Owned at end of month	Aggregate tractive effort	On order first of following month	Building in R. R. shops
1924									
January	125	271	15,228,895	178	4,447,721	64,989	2,552,694,953	439	14
February	85	214	11,296,088	175	4,906,435	65,029	2,559,519,253	457	10
March	283	176	10,457,064	181	6,033,173	64,911	2,560,076,766	520	7
April	100	97	4,167,388	112	2,881,385	64,896	2,561,362,769	552	11
May	107	153	6,949,353	107	2,600,445	64,942	2,565,706,413	447	10
June	1	160	7,687,383	178	4,575,358	64,924	2,569,121,875	360	72
July	83	197	10,590,558	113	3,354,456	65,008	2,576,433,377	401	63
August	8	229	12,513,395	166	5,346,176	65,062	2,583,372,980	324	50
September	101	160	7,061,560	151	4,351,378	65,071	2,586,083,994	285	37
October	135	113	5,743,775	220	5,712,633	64,964	2,586,106,026	358	76
November	90								
Total for 10 months		1,770							
Total for 11 months	1,118								

Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops, but not rebuilt equipment.

Figures as to installations and retirements prepared by Car Service Division, A. R. A., published in Form C. S. 56A-1. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. Figure as to orders as given in first column of table is not therefore comparable with figures relating to installations given in succeeding columns.

## Supply Trade News

**T. R. Talbot**, manager of the St. Louis district of the Republic Iron & Steel Company, has resigned.

**Charles H. Bromly** has been appointed manager of the lubrication and filtration division of **S. F. Bowser & Co.**, Ft. Wayne, Ind.

**C. J. Thompson**, district sales manager of the **Osgood Company**, with headquarters at Chicago, has been transferred to New York.

**T. E. Beddoe** has been appointed industrial sales engineer of the **Cutler Hammer Manufacturing Company**, with headquarters at Philadelphia, Pa.

**The Southwark Foundry & Machine Co.**, Philadelphia, Pa., has discontinued its Cleveland office. This office is now located at 100 East South street, Akron, Ohio, in charge of **F. H. Smith**.

**The U. S. Metallic Packing Company**, Philadelphia, Pa., has taken over the entire business of the **Locomotive Lubricator Company**, of Chicago, manufacturers of the Schlacks system of force feed lubrication. Messrs. **W. J. Schlacks**, **C. W. Rudolph** and **O. H. Neal**, formerly of the **Locomotive Lubricator Company**, have become affiliated with the **U. S. Metallic Packing Company**.

An annual meeting of branch house managers and division managers of **Fairbanks, Morse & Company**, Chicago, was held on December 1 in Chicago. Following a meeting at the University Club, the delegation of 56 men left on a trip to inspect three factories and the general offices of the company. The electrical factory at Indianapolis, Ind., was visited on December 2, the factory at Three Rivers, Mich., on December 3, and the plant at Beloit, Wis., on December 4.

**The Superfuel Corporation**, of New York, has been organized and has acquired control of the stock of the **Trent Process Corporation**, which owns the United States and foreign patent rights to the process of manufacturing an amalgam of fuel oil and bituminous or pulverized anthracite coal, which eliminates to a large extent the ash and clinker forming content of the coal. This product is now produced by several companies operating under license. **Guy M. Standifer**, identified with Pacific coast shipbuilding interests, has been elected president, and **Francis R. Wadleigh**, formerly United States fuel distributor, and commercial engineer of the U. S. Bureau of mines and head of the Coal Division of the U. S. Department of Commerce, has been elected vice-president and general manager. **J. A. Vandegrift**, president of the **Slope Mountain Coal Company**, is also a vice-president, and **Frank R. Peyton**, secretary and treasurer of the **Trent Process Corporation**, is secretary and treasurer. In addition to Messrs. Standifer, Wadleigh and Vandegrift, the following have been elected as directors: **Charles M. Barnett**, president, **Clinchfield Navigation Company**, New York; **R. M. Atwater, Jr.**, consulting engineer, New York; **Walter E. Trent**, combustion engineer, Washington, D. C., and **Charles L. Parmelee**, consulting engineer, New York.

## Obituary

**Joseph F. Gubbins**, resident manager of the **Bryant Zinc Company**, New York, died at the Knickerbocker hospital on November 21 following an operation. He was born in Limerick, Ireland, 45 years ago, and was educated at Dublin University. He went to New York in 1904 and worked in the signal department of the Long Island, and later for the New York Central. In 1913 he entered the service of the **Bryant Zinc Company**, and later became eastern district manager for that company.

## Railway Construction

**BALTIMORE & OHIO**.—This company has awarded to the **Chicago Bridge & Iron Works** a contract for furnishing and erecting a steel standpipe 28 ft. in diameter by 30 ft. high for water softening service at Ottawa, Ohio.

**CENTRAL OF NEW JERSEY**.—This company has awarded contracts as follows: To the **Arthur McMullen Company** for cut stone ashlar for 44 pedestal piers on the new Newark bay drawbridge, \$30,800; to the **Linde & Griffith Company** for the construction of a concrete sewer at the company's Elizabethport, N. J., shops, \$27,000; to **Young & French** for the construction of a new passenger station at Somerville, N. J., \$73,779.

**CHICAGO, BURLINGTON & QUINCY**.—This company contemplates the construction of an addition of 1,000,000 bushels capacity to its grain elevator at Kansas City, Mo.

**CHICAGO, BURLINGTON & QUINCY**.—This company has awarded a contract to **Allison Stocker**, Denver, Colo., for the construction of a freight house at Denver, reported in the *Railway Age* of September 27.

**CISCO & NORTHEASTERN**.—This company contemplates the construction of an extension to its line from Breckenridge, Tex., to Throckmorton, a distance of 40 miles.

**COWLITZ, CHEHALIS & CASCADE**.—This company has completed surveys for the construction of a 14-mile extension to its line which now terminates at Lacamas, Wash.

**DULUTH, MISSABE & NORTHERN**.—This company will construct 10 miles of track at Hibbing, Minn., with company forces. The project involves a large amount of excavation and the construction of four concrete and steel bridges. A water tank and two standpipes will also be installed.

**ERIE**.—This company has awarded to the **Chicago Bridge & Iron Works** a contract for the furnishing and erection of a 25,000-gal., all-steel, conical-bottom tank on a 20-ft. tower at Corning, N. Y.

**ILLINOIS CENTRAL**.—This company is calling for bids for the construction of a one-story brick freight station, 462 ft. long, at Indianapolis, Ind.

**MICHIGAN CENTRAL**.—This company will close bids on December 15 for the removal, cutting apart and loading on cars ready for shipment of the complete superstructure and approach spans of its cantilever bridge over the Niagara river between Niagara Falls, N. Y., and Niagara Falls, Ont.

**MISSOURI PACIFIC**.—This company will close bids on December 10 for the construction of an oil station at Smackover, Ark. The company contemplates the construction of an addition to the grain elevator at Kansas City, Mo., with a capacity of 500,000 bushels.

**NEW YORK CENTRAL**.—This company has reached an agreement with St. Joseph county, Ind., to construct a subway to carry the Lincoln Highway under its tracks at New Carlisle crossing, 14 miles west of South Bend, Ind.

**NORTHERN PACIFIC**.—The Interstate Commerce Commission has issued a certificate authorizing the construction of an extension of the Elma branch from Stimson to Shelton, Wash., 15 miles.

**PENNSYLVANIA**.—This company has awarded a contract to the **Heyl & Patterson Company**, Pittsburgh, Pa., for the superstructure for a 120-ton car dumper at Sandusky, Ohio, to cost approximately \$400,000. Contract for the foundation has been awarded to the **Hecker-Moon Company**, Cleveland, Ohio; estimated cost, \$250,000.

**ST. LOUIS-KANSAS CITY SHORT LINE (ELECTRIC)**.—This company, which was recently incorporated in Missouri, plans the construction of a standard gage electric road, 238 miles long, from Kansas City, Mo., to St. Louis. The line will cross the Missouri river at Arrow Rock, Mo. **Lee Dunlap** and **Frank E. Lott**, Kansas City, Mo., are two of the incorporators.



## Railway Financial News

**AKRON, CANTON & YOUNGSTOWN.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to sell \$382,700 of first mortgage 6 per cent gold bonds.

**BOSTON & MAINE.—Abandonment.**—This company has applied to the Interstate Commerce Commission for authority to abandon the operation of branch lines from Goffstown to New Boston, N. H., 5.16 miles; from Goffstown to East Milford Junction, N. H., 18.54 miles; and from Manchester to Henniker Junction, N. H., 22.77 miles.

**CHICAGO, PEORIA & ST. LOUIS.—Foreclosure Sale.**—This road was sold in parcels on November 20, as noted in last week's issue of the *Railway Age*, page 998.

**CHICAGO UNION STATION COMPANY.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$7,000,000 of 5 per cent guaranteed bonds, to be guaranteed by the proprietary companies. The bonds have been sold to Kuhn, Loeb & Co., Lee, Higginson & Co., Illinois Merchants' Trust Company, National City Bank and the First National Bank at 96½. The bankers have sold these bonds at 98½ and interest, to yield 5½ per cent.

**DELAWARE & HUDSON.—Bonds.**—The Interstate Commerce Commission has authorized an issue of \$4,600,000 of first and refunding mortgage 4 per cent bonds, to be sold at not less than 88.

**DETROIT, TOLEDO & Ironton.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to issue \$159,000 of first mortgage 50-year 5 per cent bonds, to reimburse the treasury, to be sold to members of the Ford family at par.

**Income for Nine Months.**—For the first nine months of 1924 the Detroit, Toledo & Ironton reports a net operating income of \$2,021,744, exceeding the net operating income for the same period of last year by \$514,794 and the net operating income for the whole of last year by \$234,820. The gross operating revenues for the first nine months of this year were \$8,914,969, and the total operating expenses \$5,552,556; operating ratio 62.3.

**KANSAS CITY SOUTHERN.—Bonds Sold.**—Ladenburg, Thalmann & Co. and the National City Company have sold \$3,000,000 refunding and improvement mortgage 5 per cent bonds, due April 1, 1950, at 89, to yield 5.85 per cent.

**MINNEAPOLIS & ST. LOUIS.—Default in Interest.**—An announcement from the committee consisting of Samuel Sloan, chairman; Beekman Winthrop and Lewis B. Curtis states that the receiver of the Minneapolis & St. Louis has been instructed by the court to default on semi-annual interest due December 1, on Merriam Junction-Albert Lea first mortgage 7 per cent bonds due June 1, 1927. In view of the continuation of the receivership and attempts to create prior liens ahead of the issue, the committee requests that bondholders deposit their bonds with all interest coupons, with the Farmers Loan & Trust Co., 22 William street, New York, which is depositary for the committee.

**MISSOURI-KANSAS-TEXAS.—Reorganization Expenses.**—Oral arguments were heard by the Interstate Commerce Commission at Washington on November 28 as to the propriety of the amount of compensation proposed to be paid to the reorganization managers and their counsel for services in connection with the reorganization. Paul D. Cravath contended that the proposed compensation of \$1,614,249 to the reorganization managers and \$750,000 to their counsel cannot be properly considered unless allowance is made for the long period, nine years, over which the work was continued, the loss of interest, the large overhead and the number of firms involved in the work.

**MISSOURI PACIFIC.—Equipment Trust.**—The Interstate Commerce Commission has authorized an issue of \$3,900,000 of 5 per cent equipment trust certificates to be sold at not less than 98¼.

**NORFOLK & WESTERN.—Bonds.**—This company has applied to the Interstate Commerce Commission for authority to issue and

sell \$12,000,000 divisional first lien and general mortgage 4 per cent bonds to reimburse the treasury for capital expenditures made in 1918, 1919 and 1920. It is proposed to sell \$6,000,000 to the Guaranty Company of New York at 88 and the remainder at not less than 85. The Guaranty Company has sold these bonds at 89¾ and interest, to yield 4.81 per cent.

**PORTLAND TERMINAL.—Bonds.**—This company and the Maine Central have applied to the Interstate Commerce Commission for authority for an issue of \$1,800,000 of first mortgage 5 per cent gold bonds, to be guaranteed by the Maine Central, and to be sold to Kidder, Peabody & Co., at 91 for the purpose of retiring some notes.

**SAN ANTONIO & ARANSAS PASS.—Lease.**—The directors have voted to lease this line to the Galveston, Harrisburg & San Antonio, a subsidiary of the Southern Pacific. The stockholders of the San Antonio & Aransas Pass will meet December 12 to ratify the action.

**ST. LOUIS-SAN FRANCISCO.—Votes Common Dividend.**—The directors on December 3 declared a dividend on the common stock at the rate of 5 per cent per annum. The official announcement follows:

"At the regular monthly meeting of the board of directors of the St. Louis-San Francisco a resolution was passed declaring a quarterly dividend of 1¼ per cent on the common stock of the common, to be paid on January 15, 1925, to stockholders of record January 2, 1925.

"The board also declared the four quarterly dividends on the preferred stock to be paid as follows: February 2, May 1, August 1 and November 2, 1925.

"It is expected that during the calendar year 1924 something more than 11 per cent will be earned on the outstanding stock of the company. This places the common stock on a dividend basis at the rate of 5 per cent per annum."

Seven months ago, on May 3, the common stock was sold on the New York Stock Exchange for 20 a share. On December 3 the stock closed at 62.

**TEXAS & PACIFIC.—Equipment Trust.**—The Interstate Commerce Commission has authorized an issue of \$3,285,000 of 5 per cent equipment trust certificates to be sold at not less than 98¼.

**WABASH.—Equipment Trusts Sold.**—Kuhn, Loeb & Co. have placed privately two issues of 5 per cent equipment trust certificates, series "D," amounting to \$1,826,000, and series "E," amounting to \$2,565,000. The series "D" certificates will mature in equal annual installments from December 1, 1928, to December 1, 1938, and the series "E" certificates from December 1, 1925, to December 1, 1930. The certificates were sold at prices to yield an average of about 4.87 per cent.

**WESTERN MARYLAND.—Bonds.**—The Interstate Commerce Commission has authorized the authentication and delivery of \$5,658,000 of last year by \$514,794 and the net operating income for the

### Dividends Declared

Atchison, Topeka & Santa Fe.—Preferred, \$2.50, semi-annually, payable February 2 to holders of record December 31.  
Bangor & Aroostook.—Preferred, 1¼ per cent, quarterly, payable January 1 to holders of record December 15.  
Buffalo & Susquehanna.—Common, 1¼ per cent, quarterly; preferred, 2 per cent, semi-annually; both payable December 30 to holders of record December 10.  
Fonda, Johnstown & Gloversville.—Preferred, 1½ per cent, quarterly, payable December 15 to holders of record December 10.  
Lackawanna Railroad of New Jersey 1 per cent, quarterly, payable January 2 to holders of record December 6.  
Morris & Essex.—4¼ per cent, payable January 2 to holders of record December 9.  
New York, Lackawanna & Western.—1¼ per cent, payable January 2 to holders of record December 13.  
St. Louis Southwestern.—Preferred, 1¼ per cent, quarterly, payable December 31 to holders of record December 15.

### Trend of Railway Stock and Bond Prices

	Dec. 2	Last Week	Last Year
Average price of 20 representative railway stocks .....	79.03	78.68	61.53
Average price of 20 representative railway bonds .....	89.14	89.15	82.40

## Railway Officers

### Operating

**Frederic N. Melius**, whose appointment as assistant manager of the marine department of the New York Central, with headquarters at New York, was announced in the *Railway Age* of November 15, was born on December 13, 1876, at Hudson, N. Y. He entered railway service on January 22, 1890, as messenger and call boy for the New York Central and in 1892 he became yard clerk. In 1896 he became a clerk to the assistant superintendent and in 1902 he became traveling car agent. Mr. Melius was promoted to yardmaster in 1906 and a year later he was promoted to assistant trainmaster. He was promoted to trainmaster in 1910 and was promoted again in 1916 to assistant superintendent. The following year Mr. Melius was promoted to superintendent of the Hudson division, which includes the New York terminal freight yards and stations, the position he held at the time of his recent appointment as assistant manager of the marine department. Mr. Melius' entire railway service has been with the New York Central.



F. N. Melius

**Garret H. Wilson**, whose promotion to superintendent of the Hudson division of the New York Central, with headquarters at New York, was announced in the *Railway Age* of November 15, was born on May 19, 1867, at Lambertville, N. J. He received a high school education and entered railway service on March 6, 1884, as a telegraph operator for the Pennsylvania. On May 31, 1885, he entered the service of the Central of New Jersey as a telegraph operator and subsequently served as yardmaster and train dispatcher. He entered the service of the New York, New Haven & Hartford on September 6, 1887, as a train dispatcher and later served as chief dispatcher and superintendent.



G. H. Wilson

Mr. Wilson left railway service in June, 1905, and in January, 1907, he entered the service of the Boston & Albany as a dispatcher and the following month he entered the service of the New York Central and served as superintendent of the Grand Central terminal and assistant superintendent of the electric division, with headquarters at New York, in which capacity he was serving at the time of his recent promotion to superintendent of the Hudson division.

**G. A. Holmes**, superintendent of the Black Hills division of the Chicago & North Western, with headquarters at Chadron,

Nebr., has been transferred to the Eastern division, in the same capacity, with headquarters at Norfolk, Neb., succeeding C. T. Boone, deceased. **S. S. Long**, assistant division superintendent, with headquarters at Winona, Minn., has been promoted to superintendent of the Black Hills division, succeeding Mr. Holmes.

### Executive

**W. A. Fitton**, assistant to the general manager of the Southern, Lines West, with headquarters at Cincinnati, Ohio, has been appointed executive general agent, with headquarters at Chattanooga, Tenn. He will report to, and perform such duties as may be assigned to him by, the president or vice-presidents. **J. B. Akers**, chief engineer maintenance of way and structures, Lines East, with headquarters at Charlotte, N. C., has been appointed assistant to the vice-president, with headquarters at Washington, D. C., succeeding B. Herman, promoted.

### Mechanical

**R. H. Baker** has been appointed mechanical engineer of the Chicago Great Western, with headquarters at Chicago, a newly created position.

### Engineering, Maintenance of Way and Signaling

**D. M. Lamdin**, engineer of construction of the Atlantic Coast Line, with headquarters at Wilmington, N. C., has been promoted to engineer maintenance of way, with headquarters at Jacksonville, Fla., succeeding H. G. Laird, resigned. **R. L. Groover** has been appointed office engineer, with headquarters at Wilmington, to succeed **D. B. Packard**, who has been promoted to engineer of construction, succeeding Mr. Lamdin.

**G. L. Sitton**, engineer maintenance of way of the Northern district of the Southern, with headquarters at Danville, Va., has been promoted to chief engineer maintenance of way and structures, Lines East, with headquarters at Charlotte, N. C., succeeding **J. B. Akers**, who has been promoted. **G. P. Asbury**, office engineer, with headquarters at Charlotte, has been promoted to engineer maintenance of way of the Northern district, with headquarters at Danville, succeeding Mr. Sitton.

### Obituary

**Joseph U. Crawford**, who retired on September 1, 1912, at the age of 70, as consulting engineer of the Pennsylvania, died at his home in Fox Chase, Pa., on November 21. Mr. Crawford was born on August 25, 1842, at Philadelphia, Pa., and was educated at John W. Fairies' school at Philadelphia and at the University of Pennsylvania. He entered railway service in 1871 as senior assistant engineer of the Alexandria & Fredericksburg (now a part of the Pennsylvania) and later was promoted to principal assistant engineer. He was later appointed engineer of the California division of the Texas & Pacific under Col. Thomas A. Scott, by whom he was sent to Japan as consulting engineer of the government. Mr. Crawford remained in Japan until 1878 and upon his return to America he was employed by Jay Gould to make transcontinental examination and surveys between the Pacific coast and Sale Lake, Utah, as well as in Wyoming and Nebraska. In the latter part of 1882 he entered the service of the Pennsylvania as chief engineer of the Pennsylvania-Schuylkill Valley Railroad. During 1886 and 1887 he built the Piedmont & Cumberland (now the Western Maryland) and in August, 1889, he was appointed assistant to J. N. Du Barry, second vice-president of the Pennsylvania, which position he held until the death of Mr. Du Barry, when he was made engineer of branch lines. From October, 1898, to May, 1899, he was appointed consulting engineer of the United States government to report on transportation facilities in Cuba. On April 8, 1902, Mr. Crawford was appointed engineer of the New York Connecting Railroad and from January 5, 1911, to September 1, 1912, he served as consulting engineer of the Pennsylvania, when on the latter date he retired under the pension regulations of the company.